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Memorandum

To: Carolyn Douglas, EPA Region IX

Thru: Rachel Loftin, EPA Region IX

Subject: Completed Work

Date: June 21, 1993

cc: Michele Dermer, BEI ARCS

Attached is the following completed document:

PA _____ SI X Other _____

Site Name: Du-Rite Cleaners

EPA ID: CAD 981615024 (3776)

City, County: Turlock, Stanislaus County, Calif.

For EPA Use Only

Latitude: 37° 28' 08.0" N Longitude: 120° 50' 48.0" W

EPA Further Action Determination: N

Lead Agency: EPA

Sign Off Date: 6/24/93

Initials of Work Assignment Manager: ydl

Document Screening Coordinator: mr 6-24-93

Chief, Site Evaluation and Grants Section: [signature] 6/25/93

LWO 6/25/93

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FINAL EPA File Copy

Site Inspection

Site: Du-Rite Cleaners
141 North Center St.
Turlock, CA 95380

Site EPA ID Number: CAD 981615024

Work Assignment Number: 60-15-9J00, ARCSWEST Program

Submitted to: Carolyn Douglas
Site Assessment Manager
EPA Region IX

Thru: Rachel Loftin
EPA Region IX

Date: June 21, 1993

Prepared by: Kathryn A. Curtis KAC

Review and Concurrence: Michele Dermer MD

1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA), Region IX, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), has tasked Bechtel Environmental, Inc. (BEI) to conduct a site inspection (SI) of Du-Rite Cleaners (Du-Rite) in Turlock, Stanislaus County, Calif.

The site was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) on December 12, 1990 (CAD 981615024) (1). The site was entered into CERCLIS upon recommendation by the California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB), Central Valley Region, because of municipal and private well contamination (2).

A preliminary assessment (PA) of the site was conducted for the EPA by Ecology and Environment, Inc., on May 28, 1991 (3, 1). The purpose of the PA was to review existing information on the site and its environs to assess the threat(s), if any, posed to public health, welfare, or the environment, and to determine if further action under CERCLA/SARA is warranted.

After reviewing the PA, the EPA decided that further investigation of Du-Rite would be necessary to more completely evaluate the site using the EPA's Hazard Ranking System (HRS) criteria. The HRS assesses the relative threat associated with actual or potential releases of hazardous substances on site. The HRS has been adopted by the EPA to help set priorities for further evaluation and eventual remedial action at hazardous waste sites. The HRS is the primary method of determining a site's eligibility for placement on the National Priorities List (NPL). The NPL identifies sites at which the EPA may conduct remedial response actions. This report summarizes the results of the SI of the site.

1.1 Apparent Problem

The apparent problems with the site are as follows:

- Soil gas surveys performed by the RWQCB in Turlock indicate the presence of tetrachloroethene, a solvent commonly known as perchloroethylene (PCE), in soil and groundwater near the site.
- PCE and two breakdown products, trichloroethylene (TCE) and cis-1,2-dichloroethylene (1,2-DCE), were detected in groundwater samples collected from monitoring wells in the immediate vicinity of the site.

2.0 SITE DESCRIPTION

2.1 Location

Du-Rite is located at 141 North Center St., Turlock, Calif. The geographic coordinates of the site are 37° 28' 08.0" N latitude and 120° 50' 48.0" W longitude (Township 5 South, Range 10 East, Section 14, Mount Diablo Baseline and Meridian, Turlock, Calif., 7.5-minute quadrangle) (4). The location of the site is shown in Figure 2-1.

2.2 Site Description

Du-Rite occupies the northwest end of a single-story building approximately 4,000 square feet in size at the intersection of North Center and East Olive streets in a commercial and residential area of central Turlock. The site is bordered on the northwest by East Olive Street; on the northeast by a doctor's office and Snow White Cleaners; on the southeast by a parking lot, an adjacent commercial shopping complex, and East Main Street; and on the southwest by North Center Street. Private residences are north of the site, across East Olive Street. (5)

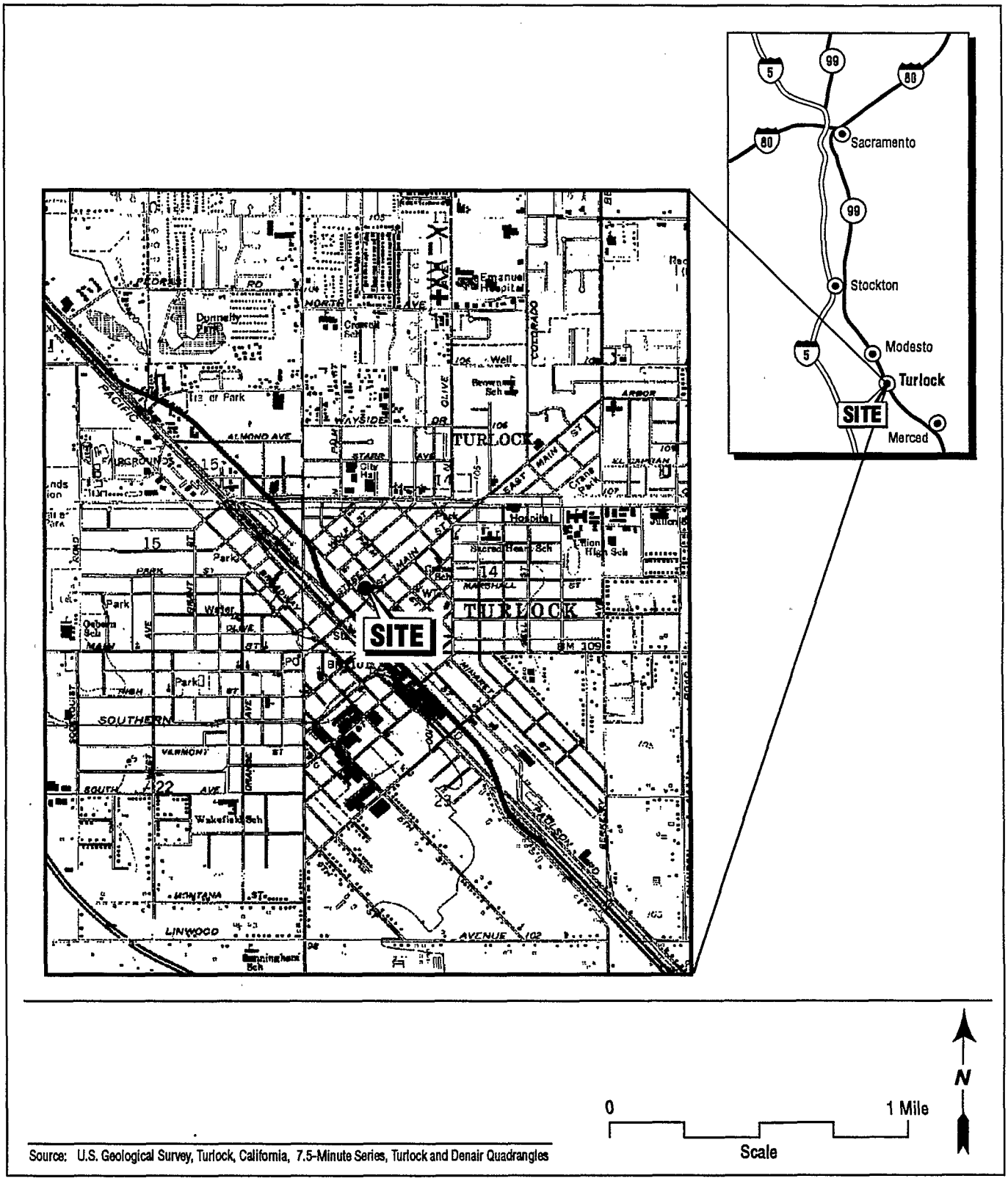
A beauty supply store and a Pacific Gas and Electric office are in the same building immediately adjacent to the site. Three monitoring wells are near the site. Two monitoring wells are less than 20 feet northwest of the site along East Olive Street, and another monitoring well is at the intersection of East Main Street and North Central Street, southeast of the site. (5) The site layout is shown in Figure 2-2.

2.3 Operational History

Mr. and Mrs. Rex Swinney and their son, Dar, own and operate Du-Rite Cleaners. According to the Swinneys, Roy Gullo, of Turlock, Calif., owns the 141 North Center St. property. Du-Rite Cleaners has occupied the site since the 1950s; the Swinneys assumed ownership in 1970. Prior to the 1950s, the site was used as an automobile lot. Operations on site prior to this time are not known. (5)

Currently, the site operates as a commercial laundry facility and dry cleaner. Du-Rite Cleaners operates a single dry cleaning machine, a "dry-to-dry" Multimatic Mercury machine. The dry cleaner washes the clothing in PCE and dries the clothing in a single closed system. PCE used in the dry cleaning process is purified by filters and distilled in a cooker unit to remove dirt and impurities (sludge) resulting from cleaning the clothing. After the dirt and impurities have been removed from the PCE, the solvent is recycled and reused. (5)

Hazardous wastes are generated by current onsite dry cleaning operations: PCE-contaminated sludge is periodically removed from the cooker unit, and spent filters containing PCE are removed and replaced. The spent filters and sludge are stored on site in two covered 55-gallon drums. When full, these drums are removed from the site by Technichem, a licensed hazardous waste disposal service. (5) Prior to 1986, cooling water from the PCE-water separator and the sludge from the cooker were discharged into a floor drain leading to the municipal sewer system (6,7). Cooling water and sludge is no longer discharged to the municipal sewer system (5).



Source: U.S. Geological Survey, Turlock, California, 7.5-Minute Series, Turlock and Denair Quadrangles

arcs93-3592b.003

Figure 2-1 Site Location

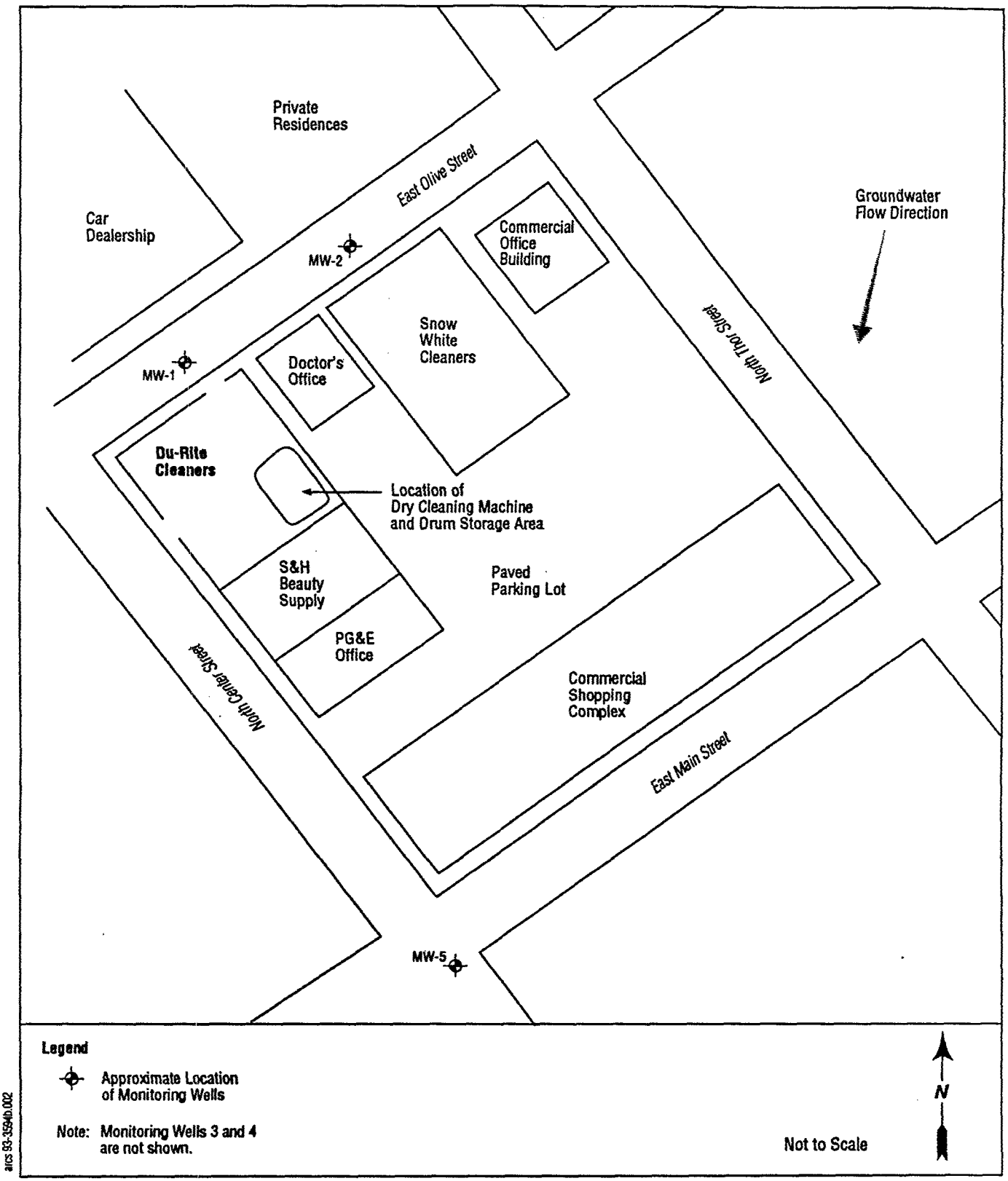


Figure 2-2 Site Layout

In January 1991, a site assessment report was completed by ETS Environmental for Rex Swinney and two other owners of dry cleaners in Turlock. This site assessment report was prepared in response to a request from the California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB), Central Valley Region. The investigation included the installation of five monitoring wells in downtown Turlock between July 1990 and December 1990, in an attempt to define the lateral and vertical extents of soil and groundwater contamination. (8) Soil and groundwater samples were collected during the installation of the wells, and the owners and operators of the individual dry cleaners were required to perform regular sampling of the wells under direction of the RWQCB (9).

2.4 Regulatory Involvement

2.4.1 U.S. Environmental Protection Agency (EPA). The site is listed in the January 19, 1993, Resource Conservation and Recovery Act (RCRA) Notifiers List as a small quantity hazardous waste generator (10).

2.4.2 California Environmental Protection Agency.

Regional Water Quality Control Board (RWQCB), Central Valley Region. The RWQCB began investigating possible sources of PCE contamination in Turlock in 1988 as a result of contamination found in private and municipal drinking water wells sampled under Assembly Bill 1803 (AB 1803). As part of the follow-up investigation, the RWQCB conducted passive soil-gas sampling throughout downtown Turlock. The results of the survey indicated high ion counts of PCE, dichloropropane, carbon tetrachloride, dichlorobenzene (DCB), and hydrocarbons in soil gas under the area. Six samples that had the highest ion counts were from locations in close proximity to currently or previously operating dry cleaning facilities, including Du-Rite Cleaners. (11)

In 1989, several dry cleaners in Turlock, including Du-Rite Cleaners, were inspected by the RWQCB. Du-Rite Cleaners was inspected on January 30, 1989, and again on November 29, 1989. RWQCB observed cooling water from the reclaimer and cooker being discharged directly to a drain connected to the municipal sewer. Samples of the cooling water discharges were collected for laboratory analysis. PCE was detected at concentrations up to 6.3 micrograms per liter (µg/l) in the residual water samples (6, 7).

In 1990, the RWQCB required the owners of three dry cleaners to install five monitoring wells in downtown Turlock. The monitoring wells (MW) were assigned to individual dry cleaners as follows: MW-1, Du-Rite Cleaners; MW-2 and MW-5, Snow White Cleaners; MW-3 and MW-4, Turlock Cleaners. Soil and groundwater samples were collected from each monitoring well during installation, and the wells were sampled quarterly during 1991. (8, 9)

Between August 1991 and November 1991, the RWQCB collected ambient and flush samples from sewer laterals adjacent to the dry cleaners in downtown Turlock (12, 13). Upstream, downstream, and flush samples were collected from manholes near the sites. PCE and cis-1,2-DCE were detected in ambient samples collected from a sewer manhole near the site. (12).

On September 6, 1991, the RWQCB held a public hearing to consider a proposed Cleanup and Abatement Order against the current and former owners and operators of three dry cleaners in Turlock, including Du-Rite Cleaners, the City of Turlock, and three manufacturers of dry cleaning equipment used at the cleaners (14). When the hearing was continued on November 22, 1991, the

RWQCB decided to not vote on the proposed order. The RWQCB instead adopted Resolution 91-247, which requested the State Water Resources Control Board sponsor legislation to establish a statewide task force and create a cleanup fund. (15) Assembly Bill 2370 (AB 2370), the California Dry Cleaning Industry Task Force Act of 1992, was approved by the governor of California on July 24, 1992. (16) The task force met for the first time in August 1992, and is currently gathering data and information for the report required by AB 2370. The task force recommendations were expected in May 1993. (17)

In July 1991, RWQCB issued Order 91-815, Monitoring and Reporting Program (MRP) for Du-Rite Cleaners, Snow White Cleaners, and Turlock Cleaners, all located in Turlock. The MRP required the owners to conduct quarterly monitoring of water levels and volatile organic compound (VOC) concentrations in MW-1 through MW-5. (18) Order 91-815 was amended in February 1992 to decrease the frequency of sampling from quarterly to semi-annually (19). Although no additional investigations by the three downtown dry cleaners have occurred since the task force was established, two of the cleaners (Du-Rite and Snow White) have conducted semi-annual monitoring of the five monitoring wells. (9, 20)

2.4.3 City of Turlock Utilities Department. In May 1991, the City of Turlock Utilities Department collected sewer water samples from the nearest downstream manholes to each dry cleaner location. The samples included one ambient and one flush sample from each manhole. Methylene chloride, chloroform, TCE, PCE, chlorobenzene, 1,4-dichlorobenzene, toluene, and total xylenes were detected in ambient and flush samples collected from the manholes downstream of the site. (21)

The City of Turlock municipal Well 5, approximately 0.75 mile south of the site, was removed from service in April 1992 when three consecutive samplings indicated the presence of PCE at concentrations that exceeded the federal maximum contaminant level (MCL) drinking water standard of 5 µg/l. The City of Turlock has drilled a new well in a different part of town to replace the well. It is not known which deep water aquifer this well draws from. (20)

3.0 INVESTIGATIVE EFFORTS

3.1 Previous Sampling and Analyses

3.1.1 Soil Gas Sampling. As part of the AB 1803 investigation, the RWQCB staff conducted passive soil gas sampling throughout downtown Turlock in June 1989. The survey consisted of placing Pyrex tubes containing carbon coated wire, open end down, approximately 10 inches to 12 inches below the soil surface. After approximately 7 weeks, the tubes were removed and the ion counts of VOCs were determined by Curie point desorption mass spectrometry. Forty-four samples were analyzed. The results of the survey indicated ion counts of PCE, dichloropropane, carbon tetrachloride, dichlorobenzene (DCB), and hydrocarbons in soil gas in the Turlock area. (11) A PCE soil gas plume was identified in downtown Turlock. (22)

3.1.2 Residual Water Sampling. During the January 1989 and November 1989 inspection of Du-Rite, the RWQCB collected an unknown number of samples of cooling water from each of the two reclaimers, the cooker, and the solvent separator. The samples were analyzed for the presence of PCE using an unreported EPA method. Analytical results indicated a concentration of 6.3 µg/l PCE in cooling water from the cooker, a concentration of 5.3 µg/l PCE in cooling water for the

solvent separator, and concentrations up to 4.7 µg/l PCE in cooling water from both reclaimers. The method of sample collection is also not known. (6, 7)

3.1.3 Sewer Sampling. In May 1991, the City of Turlock collected one ambient and one flush sewer water sample from the nearest downstream manhole to Du-Rite's sewer lateral. The ambient sample was a static sample of the manhole contents. The flush sample was collected after running a hydrovac hose to the location of Du-Rite's discharge into the city main and flushing the contents of the main. The ambient and flush samples were analyzed for VOCs using EPA methods 601 and 602. Analytical results from ambient samples collected prior to agitation indicated concentrations of 4.20 µg/l methylene chloride, 15.1 µg/l PCE, 2.36 µg/l toluene, and 258 µg/l total xylenes. In addition, concentrations of 1.38 µg/l methylene chloride, 0.668 µg/l chloroform, 3.95 µg/l TCE, 27.2 µg/l PCE, 4.03 µg/l chlorobenzene, 43.3 µg/l 1,4-dichlorobenzene, 0.965 µg/l toluene, and 62.0 µg/l total xylenes were detected in sewer water samples collected after agitation. (21)

Between August 1991 and November 1991, the RWQCB performed sewer water sampling throughout the Turlock area, including the collection of ambient and flush samples from sewer laterals adjacent to Du-Rite (12, 13). The samples were taken at manholes near the location where the dry cleaner's sewer lateral enters the main. The flush sample was taken after stirring up the bottom sediment in the sewer with large quantities of water (and sometimes running a ball down the line). The flush sample was taken at the downstream sewer access when an increase of flow was noted. (22) Sewer water samples were analyzed using EPA methods 601 and 602. Concentrations up to 24 µg/l PCE and 11 µg/l cis-1,2-DCE were detected in ambient water samples collected from a manhole near the site. (13)

3.1.4 Soil Sampling. From July 10, 1990 through December 14, 1990, ETS Environmental Associates, Inc. installed five monitoring wells in downtown Turlock in an attempt to define the lateral and vertical extent of soil and groundwater contamination near the dry cleaners. These monitoring wells were installed on behalf of the owners of Du-Rite and two other dry cleaners in response to a request by the RWQCB. The approximate locations of MW-1, MW-2, and MW-5 are shown in Figure 2-2. MW-4 was installed near the corner of North Thor Street and Mitchell Street, approximately 500 feet north of the site, and is considered to be the upgradient monitoring well. MW-3 was installed in the parking lot of Turlock Cleaners, approximately 500 feet northeast of the site. (8)

Fifteen soil samples were collected at approximately 5-foot intervals from the soil borings of MW-1 through MW-5 during their installation. The samples were collected using a California-modified split-spoon sampler fitted with brass liners. Each soil sample was analyzed using EPA Method 8010. In the MW-1 boring, concentrations of 84.0 parts per billion (ppb) PCE, 0.8 ppb trans-1,2-dichloroethene, and 2.1 ppb TCE were detected in soil from an approximate depth of 9.5 feet below ground surface (bgs). In the MW-2 boring, concentrations of 16.0 ppb PCE were detected in soil from an approximate depth of 10.5 feet bgs, and concentrations of 1.2 ppb TCE were detected in soil at an approximate depth of 5 feet bgs. In MW-3, PCE was detected at concentrations of 2.8 ppb and 5.8 ppb from soil samples collected from approximate depths of 16.5 feet and 9.5 feet, respectively. PCE and TCE were not detected in soil samples collected during the installation of MW-4 and MW-5. All other constituents analyzed by EPA Method 8010 were not detected (the analytical detection limits are not known). (8)

3.1.5 Groundwater Sampling. After installing and developing the five monitoring wells in downtown Turlock between July and December 1990, ETS Environmental Associates, Inc.

collected groundwater samples from each well. The samples were analyzed using EPA Method 601. PCE , TCE, cis-1,2-dichloroethene, and chloroform were detected in MW-1 at concentrations of 1,100 ppb, 62 ppb, 52 ppb, and 1.7 ppb, respectively. PCE was also detected in groundwater samples from MW-2, MW-3, and MW-5 at concentrations of 7.1 ppb, 22.0 ppb, and 233.0 ppb, respectively. (8)

In May 1991 and September 1991, Consulting Engineer John M. Minney sampled groundwater from the five monitoring wells in downtown Turlock (9, 23). Groundwater was also sampled by RESNA in October 1991 and December 1991 (9). The sampling was performed to partially fulfill the requirements of Order 91-815 issued by the RWQCB to the three dry cleaners in Turlock. All groundwater samples collected during 1991 were analyzed using EPA methods 601 and 602. Analytical results indicated concentrations of up to 1,400 µg/l PCE and 50 µg/l TCE in MW-1, concentrations up to 37 µg/l PCE in MW-2, concentrations up to 40 µg/l PCE in MW-3, less than 0.5 µg/l (not detected) PCE in MW-4, and concentrations up to 26 µg/l PCE in MW-5. (9) Although the RWQCB decreased the frequency of groundwater sampling from these five wells under an amendment to Order 91-815 in February 1992, it is not currently known if groundwater monitoring has continued near the site (19).

3.2 EPA Sampling

No EPA-sponsored sampling has been conducted at, or is proposed for, Du-Rite because existing sampling data provide sufficient information to evaluate the site at this time.

4.0 HAZARD RANKING SYSTEM FACTORS

4.1 Sources of Contamination

Currently, dry cleaning operations occurring on site generate hazardous substances. Two potential hazardous substance sources are associated with the site:

- Dry cleaning wastewater, containing PCE produced by the dry cleaning processes on site, was previously discharged to the municipal sanitary sewer.
- Two 55-gallon drums inside the building are used for storage of spent dry cleaning filters and cooker sludge prior to removal from the site by a licensed hazardous waste transporter.

4.2 Groundwater Pathway

4.2.1 Hydrogeological Setting. The site lies in Turlock, Calif., in the San Joaquin Valley, an asymmetric structural trough running approximately 250 miles northwest from the Sacramento-San Joaquin River Delta to Kern County. The Turlock area is underlain by alluvial plain sediments. (24, 9)

At least three hydrostratigraphic units occur in the Turlock area: an unconfined aquifer, a confined unconsolidated aquifer, and a confined bedrock aquifer. The unconfined aquifer extends to a depth of approximately 100 feet bgs and overlies the Corcoran Clay, a regionally extensive clay layer that

varies from 0 to 150 feet thick (average thickness is 60 feet). The Corcoran Clay in turn overlies the confined aquifer. The confined aquifer is composed of unconsolidated and semi-consolidated sediments of gravel, sand, silt, and clay. Beneath the confined aquifer, the Valley Springs Formation (maximum thickness 450 feet) and Mehrten Formation (maximum thickness 1,200 feet) constitute the principal lithologic units of the bedrock aquifer. (24, 9)

Most of the water used in the Turlock area is drawn from the confined aquifer at depths of approximately 400 feet to 500 feet bgs. In some areas, however, the Corcoran Clay may be absent. For example, there appears to be localized interconnection between the unconfined aquifer and the confined aquifer near City of Turlock Well 5. Little water is extracted from above the Corcoran Clay, and the bedrock aquifer is not an important water source in the Turlock area. (25,9)

Groundwater beneath the site is encountered at an approximate depth of 16 feet to 18.5 feet (8). Groundwater in the Turlock area flows south to southwest (24, 9) The site is underlain by layers of well graded sand, silty sand, sandy silt, sandy clay, and gravely clay. In addition, a heaving sand layer is present at a depth of approximately 20 feet to 25 feet. (8) The mean annual total precipitation for the Turlock area is approximately 20.56 inches annually (26).

*4.2.2 **Groundwater Targets.*** Two municipal water suppliers operate drinking water wells within 4 miles of the site: the City of Turlock and the Del Este Water Company. The nearest drinking water well (City of Turlock Well 13) is less than 0.5 mile northeast of the site. The distribution of wells and populations served by these systems are:

- City of Turlock: 22 wells in one blended system, serving approximately 44,540 people (25); and
- Del Este Water Company: four wells (two wells are blended and serve 1,148 people, one well serves 126 people, and one well serves 186 people) serving a total of approximately 1,460 people. (27)

*4.2.3 **Groundwater Pathway Conclusion.*** Hazardous substances are currently generated by onsite dry cleaning operations. Also, hazardous substances may have been released to groundwater from the site. PCE-contaminated water was previously discharged to the municipal sewer system. Exfiltration and leakage from the sewer system may have resulted in the presence of PCE in soil and groundwater on site. PCE has been detected in the shallow (unconfined aquifer) groundwater monitoring wells less than 20 feet from the site. Groundwater used for drinking water in the Turlock area is obtained from the confined aquifer below the Corcoran Clay layer at an approximate depth of 400 feet to 500 feet bgs. Although the City of Turlock has closed Well 5, a municipal drinking water well approximately 0.75 mile downgradient of the site due to PCE contamination, this contamination cannot be attributed to Du-Rite. Approximately 46,000 people obtain drinking water from drinking water wells within 4 miles of the site. (25)

4.3 Surface Water Pathway

According to the City of Turlock Utilities Department, stormwater runoff in Turlock flows to Donnelly Storm Pond. The water is then pumped into Turlock Irrigation District Lateral 4, an irrigation canal that flows to the San Joaquin River, approximately 13 miles from the site. According to the Turlock Irrigation District, water from its canals is used for irrigation, but not for drinking water. Furthermore, canal water passes over weirs and waterfalls, so the water is well aerated by the time it reaches the San Joaquin River (28, 29). No drinking water intakes are within

15 miles downstream of the site. According to the City of Turlock Planning Department, all of downtown Turlock is within Flood Zone C (zone of minimal flooding) (30).

According to the California Department of Fish and Game, three federally listed endangered species (American bald eagle, peregrine falcon, and kit fox) and three state-listed endangered species (delta button celery, kangaroo rat, Swainson's hawk) live in riparian habitats within 15 miles downstream of the site. (31, 32)

Recreational fishing occurs along the San Joaquin River. However, according to the California Department of Fish and Game, the quantity of fish caught along the river immediately downstream of Turlock Irrigation District canal is not precisely known. (33) According to water records maintained by the U.S. Geological Survey, the average discharge of the San Joaquin River over 79 years of record-keeping near Newman, Calif., is 2,005 cubic feet per second (34).

4.4 Soil Exposure and Air Pathway

Du-Rite Cleaners is located in a commercial and residential area of Turlock. The property is entirely paved for customer parking, covered by a building, and is not fenced. Residential neighborhoods are less than 200 feet north of the site, and the nearest school is less than 0.5 mile from the site. No daycare centers are within 200 feet of the site. (5) The population of Turlock is 45,467 people (35).

5.0 EMERGENCY RESPONSE CONSIDERATIONS

The National Contingency Plan [40 CFR 300.415 (b) (2)] authorizes the EPA to consider emergency response actions at those sites that pose an imminent threat to human health or the environment. For the following reasons, a referral to Region IX's Emergency Response Section does not appear to be necessary:

- Hazardous substances generated on site are stored in covered drums inside the building prior to removal from the site by Technichem, a licensed hazardous waste transporter.
- The RWQCB has performed a number of investigations of dry cleaners in downtown Turlock. The Cleanup and Abatement Order stayed by the RWQCB may be reinstated pending the conclusions reached by the task force investigating PCE groundwater contamination in the Central Valley.

6.0 SUMMARY

The Du-Rite Cleaners site is located at 141 North Center Street, Turlock, Calif. The site consists of a single story building (approximately 4,000 square feet) in a commercial and residential area of downtown Turlock. The site is bordered on the northwest by East Olive Street; on the northeast by a doctor's office and Snow White Cleaners; on the southeast by a parking lot, a commercial shopping complex, and East Main Street; and on the southwest by North Center Street. The nearest school is less than 0.5 mile from the site. The property is entirely paved for customer parking, covered by a building and is not fenced.

Mr. and Mrs. Rex Swinney and their son, Dar, own and operate Du-Rite Cleaners. According to the Swinneys, Roy Gullo, of Turlock, Calif., owns the 141 North Center Street property. Du-Rite Cleaners has occupied the site since the 1950s; the Swinneys assumed ownership in 1970. Prior to the 1950s, the site operated as an automobile lot. Operations at the site prior to the 1950s are not known.

Currently, the site operates as a commercial laundry facility and dry cleaner. Du-Rite Cleaners operates a single dry cleaning machine, a "dry-to-dry" Multimatic Mercury machine. The dry cleaner washes the clothing in tetrachloroethene, a solvent commonly known as perchloroethylene (PCE), and dries the clothing in a single closed system. After the dirt and impurities have been removed from the PCE, the solvent is recycled and reused. Hazardous wastes generated by current onsite dry cleaning operations include PCE-contaminated sludge and spent filters. The spent filters and sludge are currently stored on site in two covered 55-gallon drums until the drums are removed from the site by Technichem, a licensed hazardous waste disposal service. However, prior to 1986, cooling water from the PCE-water separator and the sludge from the cooker were discharged into a floor drain leading to the municipal sewer system.

In 1988, the California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB), Central Valley Region, began investigating possible sources of PCE contamination in Turlock. The RWQCB performed soil gas sampling throughout downtown Turlock and conducted site inspections of Du-Rite Cleaners and three other nearby dry cleaners. On three occasions in 1991, the RWQCB and the City of Turlock conducted flush and ambient sewer water sampling from manholes near the site. PCE and other chlorinated hydrocarbons were detected in both soil gas and sewer water samples. In response to a request from the RWQCB, Du-Rite Cleaners and two other nearby dry cleaners conducted a site assessment to define the nature and extent of soil and groundwater contamination in downtown Turlock. Investigative activities included monitoring well installation and soil and groundwater sampling. Concentrations up to 84.0 parts per billion (ppb) PCE were detected in subsurface soil samples, and concentrations up to 1,400 ppb PCE were detected in groundwater samples collected near the site.

In September 1991, the RWQCB, held a public hearing to consider a proposed Cleanup and Abatement Order against the current and former owners and operators of Du-Rite Cleaners, two other dry cleaners in Turlock, the City of Turlock, and three manufacturers of dry cleaning equipment used in the cleaners. Instead of voting on the proposed order, the RWQCB adopted a resolution requesting the State Water Resources Control Board to sponsor legislation to establish a statewide task force and create a cleanup fund. The task force recommendations were due in May 1993.

Although hazardous substances currently generated on site are stored in covered drums inside the building, previous practices may have released wastewater containing hazardous substances to soil and groundwater through discharges to the municipal sewer system. Stormwater runoff in Turlock flows through Donnelly Storm Pond into Turlock Irrigation District Lateral 4, an irrigation canal that flows to the San Joaquin River, approximately 13 miles downstream of the site. No drinking water intakes are within 15 miles downstream of the site, but sensitive environments and fisheries occur along the San Joaquin River. Recreational fishing occurs along the San Joaquin River, but the quantities of fish caught are not precisely known.

The following pertinent Hazard Ranking System factors are associated with the site:

- The site is completely paved or covered by a building.

- No residences, schools, or daycare centers are on or within 200 feet of the site.
- PCE, trichloroethylene, and cis-1,2-dichloroethylene have been detected in shallow groundwater monitoring wells less than 20 feet from the site.
- Groundwater is used for drinking water in the Turlock area. Most of the drinking water is drawn from the confined aquifer at depths of 400 feet to 500 feet below ground surface. Shallow groundwater in the unconfined aquifer occurs at a depth of 16 feet to 18.5 feet below ground surface.
- Twenty-six drinking water wells within 4 miles of the site serve approximately 46,000 people. One drinking water well (City of Turlock Well 5) has been closed due to PCE contamination, but the contamination cannot be attributed to the site because of the presence of other dry cleaners in downtown Turlock.

REMEDIAL SITE ASSESSMENT DECISION - EPA REGION IX

Site Name: DU-RITE CLEANERS **EPA ID#:** CAD 981615024

Alias Site Names: —

City: TURLOCK **County or Parish:** STANISLAUS **State:** CA

Refer to Report Dated: June 21, 1993 **Report type:** SI

Report developed by: Bechtel Environmental, Inc.

DECISION:

|X| **1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:**

|X| 1a. Site does not qualify for further remedial site assessment under CERCLA (Site Evaluation Accomplished - SEA)

| | 1b. Site may qualify for further action, but is deferred to: | | RCRA | | NRC

| | **2. Further Assessment Needed Under CERCLA:** 2a. (optional) Priority: | | Higher | | Lower

2b. Activity Type: | | PA | | SI | | ESI | | HRS evaluation

| | Other: _____

DISCUSSION/RATIONALE:

Report Reviewed, Approved, and Site Decision Made by: _____ **Signature:** Carolyn J. Douglas **Date:** 6/24/93

APPENDIX A

REFERENCE LIST

Site: Du-Rite Cleaners

1. U.S. Environmental Protection Agency, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), April 5, 1993.

2. Izzo, Victor, J., California Regional Water Quality Control Board, Central Valley Region, Letter to Paul LaCourreye (with attachments), October 30, 1990.

3. Ecology and Environment, Inc. Preliminary Assessment for Du-Rite Cleaners, May 9, 1991.

4. U.S. Geological Survey, Turlock Quadrangle, California, Stanislaus County, 7.5-minute series (topographic), 1961, Photorevised 1976.

5. Johnston, Trey, Bechtel Environmental, Inc., Site Reconnaissance Interview and Observations Report, October 15, 1992.

6. Lowry, Polly, California Regional Water Quality Control Board, Memorandum to Jerrold A. Bruns on the Investigation of Du-Rite Cleaners as a Source of PCE contamination in Turlock Municipal Well 1 and Tri-Valley Growers Wells 1 and 2, December 20, 1989.

7. Central Valley Regional Water Quality Control Board, Inspection Report for Du-Rite Cleaners by Polly Lowry, November 29, 1989.

8. ETS Environmental & Associates, Site Assessment Report for Turlock Dry Cleaners Sites (Du-Rite, Snow White, & Turlock Cleaners), January 17, 1991, pp 1, 5, 14-17, Appendix C.

9. Juncal, Russell, W., RESNA, Quarterly Monitoring Report, Order No. 91-815, Du-Rite Cleaners Groundwater Investigation, Turlock, CA., January 20, 1992, pp 1, 2, Figures 2-3, Table 1.

10. U.S. Environmental Protection Agency, Resource Conservation and Recovery Act Notifiers List, Region IX Database, January 19, 1993.

11. Denzler, Sara, E., California Regional Water Quality Control Board, Central Valley Region, Memorandum to WIP Program Files on Soil-Gas Sampling Results, Turlock, CA., (with attachments), June 1, 1989.

12. Lowry, Polly, California Regional Water Quality Control Board, Central Valley Region, Letter (with attachments) to Cliff Martin, City of Turlock, September 26, 1991.

REFERENCE LIST (Cont'd)

Site: Du-Rite Cleaners

13. Lowry, Polly, California Regional Water Quality Control Board, Central Valley Region, Memorandum to Wendy L. Cohen on November 1991 Sewer Lateral Sample Results in Turlock, Stanislaus County, November 20, 1991.

14. Cohen, Wendy, L., California Regional Water Quality Control Board, Central Valley Region, Memorandum on Summary of 6 September 1991 Cleanup and Abatement Hearing, Turlock Dry Cleaners, et. al, Stanislaus County (with attachments), September 16, 1991.

15. Crooks, William, H., California Regional Water Quality Control Board, Central Valley Region, Memorandum to W. Don Maughn on Resolution Requesting the SWRCB Sponsor Legislation to Establish a Statewide Task Force and a Cleanup Fund for PCE Pollution of Groundwater (with attachments), November 26, 1991.

16. State of California, Assembly Bill No. 2370, Chapter 347, Section 1, Chapter 6, Dry Cleaning Industry Task Force, pp 1-5.

17. Central Valley Regional Water Quality Control Board, Meeting Agenda (with attachments), May 20, 1993.

18. California Regional Water Quality Control Board, Central Valley Region, Order No. 91-815, Monitoring and Reporting Program for Du-Rite Cleaners, Snow White Cleaners, Turlock Cleaners, Turlock, Stanislaus County, July 17, 1991.

19. Lowry, Polly, California Regional Water Quality Control Board, Central Valley Region, Letter (with attachment) to Rex Swinney and Roy Gullo, February 21, 1992.

20. Central Valley Regional Water Quality Control Board, Meeting Agenda (with attachments), December 4, 1992.

21. Martin, Cliff, City of Turlock, Letter (with attachments) to Polly Lowry, California Regional Water Quality Control Board, Central Valley Region, August 9, 1991.

22. California Regional Water Quality Control Board, Central Valley Region, Dry Cleaners, A Major Source of PCE in Ground Water, Well Investigation Program, March 27, 1992, pp 14, 16.

23. Minney, John, M., Consulting Engineer, Letter to Glenn J. Holder on the Site Assessment of Snow White Cleaners (with attachments), March 4, 1991, pp 4, 9.

24. Page, R.W., Geology of the Fresh Groundwater Basin of the Central Valley, California, with Texture Maps and Sections, U.S. Geological Survey Professional Paper 1401–C, 1986, p. C4 and Table 1.

REFERENCE LIST (Cont'd)

Site: Du-Rite Cleaners

25. Wilde, Dan, City of Turlock, Utilities Department, Discussion recorded on Contact Report by Kathryn A. Curtis, Bechtel Environmental, Inc. May 5, 1993.

26. U. S. Department of Commerce, Climatic Atlas of the United States, June 1968.

27. Del Este Water Company, Map of Service Area and Wells, Annotated by Ken Ward, Production Manager, February 1993.

28. Fryer, Will, Turlock Irrigation District, Telephone Conversation Recorded on Contact Report by Gregory R. Carroll, Bechtel Environmental, Inc., October 13, 1992.

29. Madden, Dan, City of Turlock Utilities Department, Telephone conversation recorded on Contact Report by Tonia Cannizzaro, Bechtel Environmental, Inc., October 13, 1992.

30. Casper, Cydney, City of Turlock Planning Department, Discussion recorded on Contact Log, May 20, 1993.

31. Brueggemann, Bob, California Department of Fish and Game, Telephone Conversation Recorded on Contact Report by Kathryn Curtis, Bechtel Environmental, Inc., October 7, 1992.

32. Brueggemann, Bob, California Department of Fish and Game, Telephone Conversation Recorded on Contact Report by Gregory R. Carroll, Bechtel Environmental, Inc., December 1, 1992.

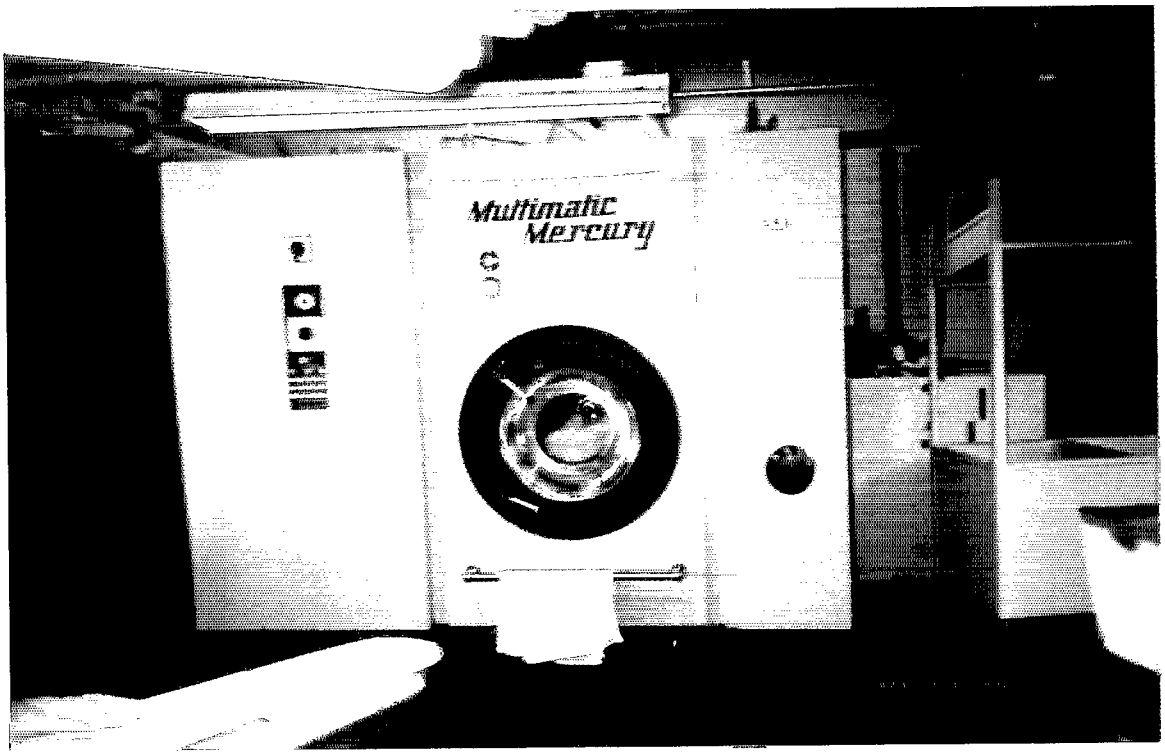
33. Stevens, Stan, California Department of Fish and Game, Discussion recorded on Contact Log, May 10, 1993.

34. Mullen, J.R., S.W. Anderson, T.C. Hunter, and E.B. Hoffmann, U.S. Geological Survey Water-Data Report CA-91-3, Water Resources Data, California, Water Year 1991, Volume 3, Southern Central Valley Basins and The Great Basin from Walker River to Truckee River, p. 229.

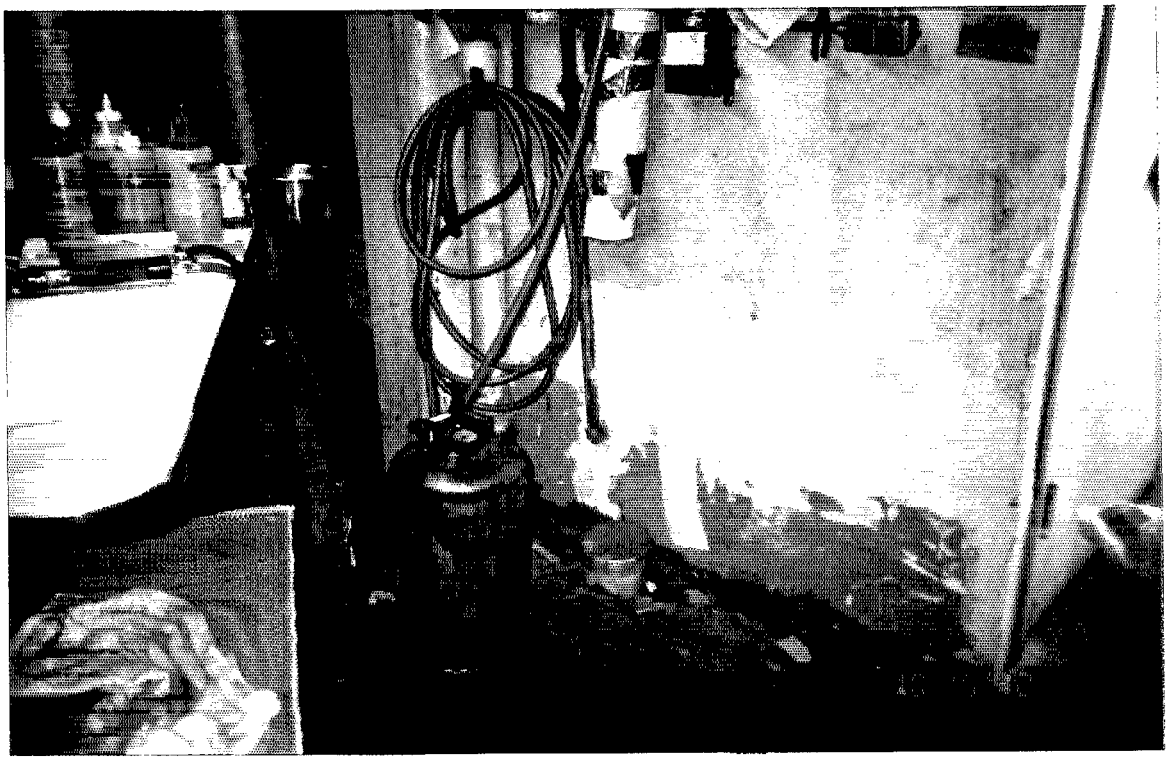
35. Rubi, Ernie, City of Turlock Planning Department, Telephone conversation recorded on Contact Report by Tonia Cannizzaro, Bechtel Environmental, Inc., September 30, 1992.

APPENDIX B
Photographic Documentation

1. Front of Du-Rite Cleaners (facing northeast).

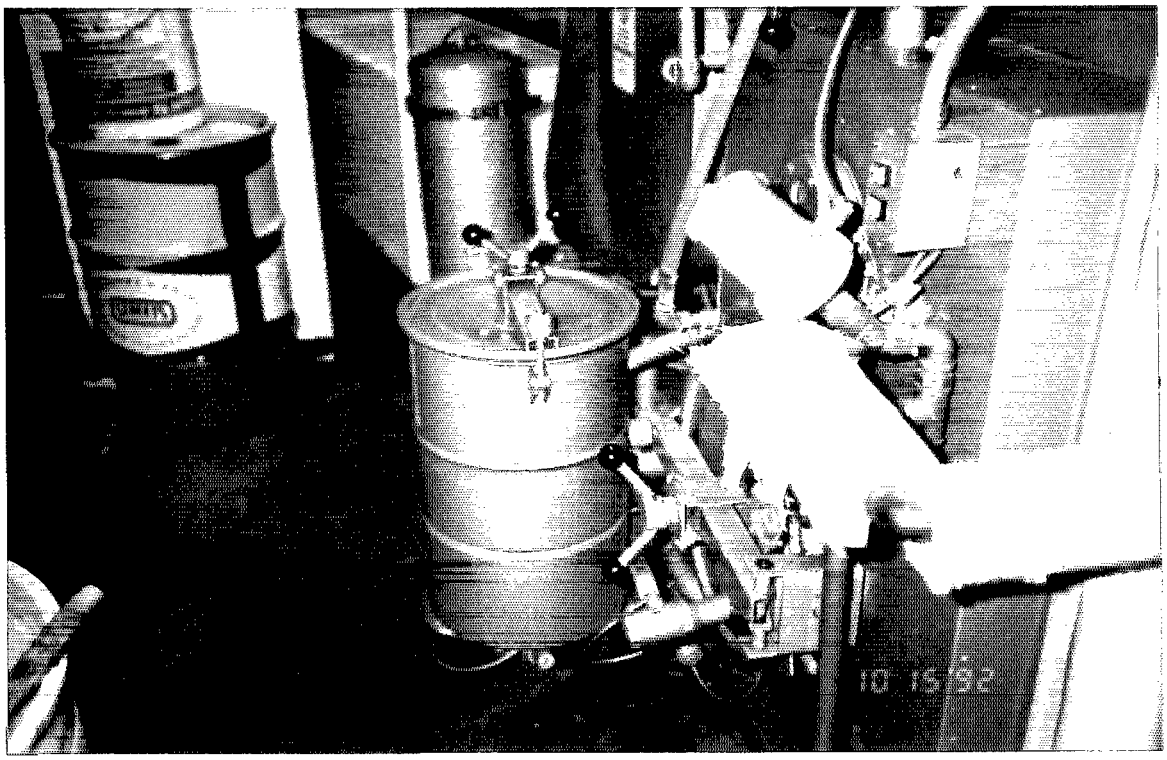


2. Multimatic Mercury dry cleaning machine currently in use at Du-Rite.

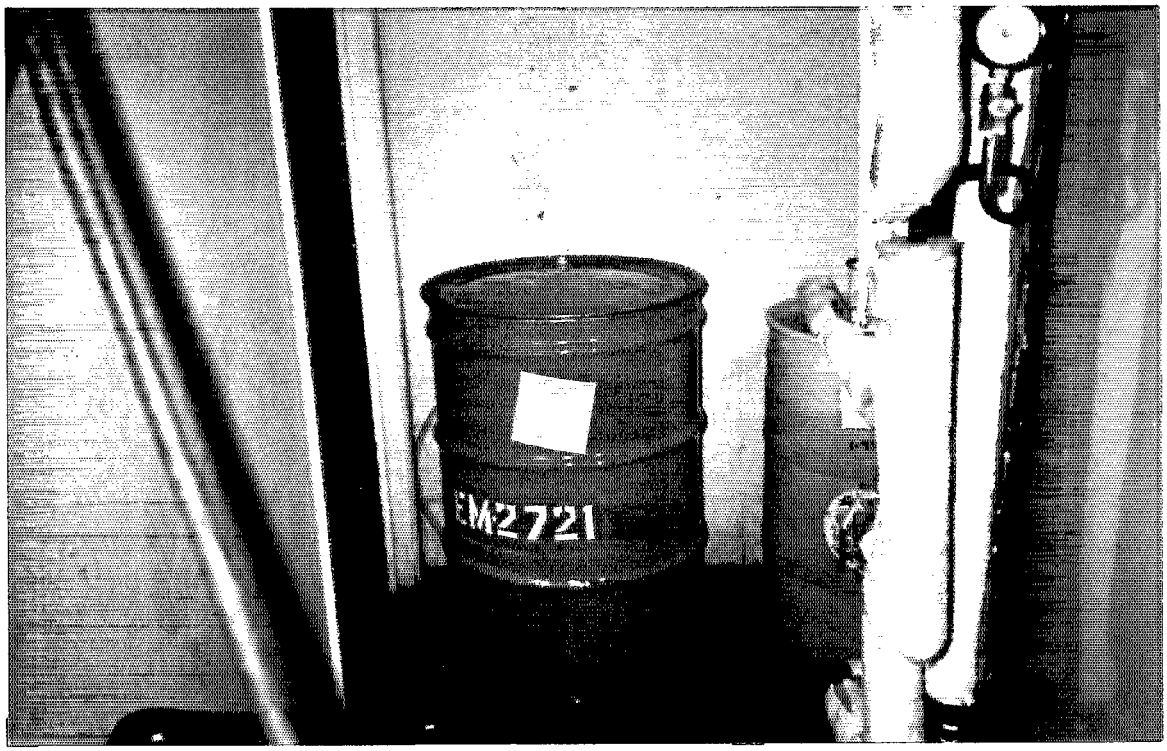


3. Capped-off sewer tie-in at rear of building.

4. Fifty-five-gallon drum for storage of used filters. Red drum is empty.



5. Sludge collector behind the dry cleaning machine.



6. Fifty-five-gallon drum for storage of hazardous sludge from the dry cleaning process.

APPENDIX C

CONTACT LOG

Site: Du-Rite Cleaners

EPA ID: CAD 981615024

Name	Affiliation	Phone	Date	Information
Ernie Rubi	City of Turlock, Planning Department	(209) 668-5565	9/30/92	See Contact Report written by Tonia Cannizzaro, Bechtel Environmental, Inc. (BEI).
Ken Ward	Del Este Water Co.	(209) 522-1071	9/30/92	Left message.
Dan Wilde	City of Turlock, Utilities Department	(209) 668-5590	9/30/92	Left message.
Polly Lowry	Regional Water Quality Control Board, Central Valley Region (RWQCB)	(916) 361-5649	10/1/92	See Contact Report written by Trey Johnston, Bechtel Environmental, Inc. (BEI).
Dar Swinney	Du-Rite Cleaners	(209) 667-1616	10/6/92	Set up site visit with Dar Swinney, son of owner Rex Swinney.
Bob Brueggemann	California Department of Fish and Game	(209) 222-3761	10/7/92	See Contact Report written by Kathryn A. Curtis, BEI.
Will Fryer	Turlock Irrigation District	(209) 883-8816	10/13/92	See Contact Report written by Gregory R. Carroll, BEI.
Dan Madden	City of Turlock, Utilities Department	(209) 668-5590	10/13/92	See Contact Report written by Tonia Cannizzaro, BEI.
Bob Brueggemann	California Department of Fish and Game	(209) 222-3761	12/1/92	See Contact Report written by Gregory R. Carroll, BEI.
Dan Wilde	City of Turlock, Utilities Department	(209) 668-5590	5/5/93	See Contact Report written by Kathryn A. Curtis, BEI.
Stan Stevens	California Department of Fish and Game	(209) 635-1941	5/10/93	No precise figures for annual fish catches are available for irrigation ditches in the Turlock area, or for the San Joaquin River in Stanislaus County.

CONTACT LOG (Cont'd)

Site: Du-Rite Cleaners & Laundry

Name	Affiliation	Phone	Date	Information
Cydney Casper	City of Turlock Planning Department	(209) 668-5565	5/20/93	Turlock lies entirely within Flood Zone C (zone of minimal flooding), according to the National Flood Insurance Program, Flood Insurance Rate Map, Community Panel Number 0603 92B.

CONTACT REPORT

AGENCY/AFFILIATION: City of Turlock		
DEPARTMENT: Planning Department		
ADDRESS: 900 North Palm Street	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95380
CONTACT(S)	TITLE	PHONE
Ernie Rubi	Senior Planner	(209) 668-5565
BEI PERSON MAKING CONTACT: Tonia Cannizzaro TC		DATE: 9/30/92
SUBJECT: City of Turlock population information		
SITE NAME: Bright Cleaners	EPA ID: CAD 983579608	

DISCUSSION:

Mr. Rubi informed me that as of January 1, 1992, the city of Turlock has a population of 45,467. Mr. Rubi also said that the average population multiplier is three people per home.

CONTACT CONCURRRENCE: _____ DATE: _____

340 00004 352 00003 ~~352 00001~~ ~~340 00002~~
342 00003 354 00003 ~~354 00001~~ ~~342 00001~~
345 00003 ~~345 00001~~

CONTACT REPORT

AGENCY/AFFILIATION: California Regional Water Quality Control Board (RWQCB)		
DEPARTMENT: Central Valley Region		
ADDRESS: 3443 Routier Road	CITY: Sacramento	
COUNTY: Sacramento	STATE: CA	ZIP: 95827-3098
CONTACT(S)	TITLE	PHONE
Polly Lowry	Project Manager	(916) 361-5649
BEI PERSON MAKING CONTACT: Trey Johnston KO TJ		DATE: 10/1/92
SUBJECT: Dry Cleaners in the Turlock area.		
SITE NAME AND EPA ID: Du-Rite (CAD 981615024), Carr's Cleaners (CAD 981644545), Snow White Cleaners (CAD 982035222), Turlock Cleaners (CAD 981978190), and Brite Cleaners (CAD 983579608).		

DISCUSSION:
Per our conversation this morning confirming the original contact report dated 2/21/91, sent by Teryl Nuckols of Ecology and Environment , Ms. Lowry informed me that RWQCB is the lead agency involved with the dry cleaners in the City of Turlock. A Cleanup and Abatement Order is being withheld pending the completion of a study of dry cleaners ~~in Turlock~~ due out in February 1993.

Sampling of the monitoring wells in the area is performed semi-annually ~~by the City of Turlock Department of Public Works~~. In 1985, contamination was detected in Turlock Municipal well #1 at a level of 2.3 ppb of PCE. In 1988, three wells at Tri-Valley growers Plant #6, approximately 0.25 mile south of the intersection of Golden State Blvd. and East Avenue in Turlock, were found to be contaminated with PCE. ~~The same year,~~ PCE contamination was discovered in Municipal well #5 at 4 ppb. Municipal well #1 is now out of service due to poor construction. ~~Municipal well #5 is still in operation.~~ – ask City about this

In 1988, the RWQCB required the installation of 11 monitoring wells near the five different dry cleaners to determine the source of the contamination. Soil samples were collected when the monitoring wells were installed. The monitoring wells are located very close to each of the dry cleaners. Almost all the wells which showed PCE in the groundwater also had PCE contamination in the soil samples collected at various depths below ground surface (bgs).

Soil?

Sample Location	Depth	Level of PCE
Turlock	9.5	5.8 ppb
Turlock	16.5	2.8 ppb
Snow White	10.5	16 ppb
Du-Rite	~~9.5~~ 9.5	~~8~~ 4 ppb

CONTACT REPORT (Cont'd)

AGENCY/AFFILIATION: California Regional Water Quality Control Board		
CONTACT(S)	TITLE	PHONE
Polly Lowry	Project Manager	(916) 361-5649
SITE NAME: Snow White, Turlock, Carr's, Brite and Du-Rite Cleaners	EPA ID: CAD (see front page)	

DISCUSSION: Cont'd

The wells were drilled and screened above the Corcoran Clay, to a depth of 30 feet bgs. Contamination was observed in groundwater near all of the dry cleaners (Snow White, Turlock, Carr's and Du-Rite Cleaners) except for Brite Cleaners.

The well located near Turlock Cleaners exhibited a level of PCE of 22 parts per billion (ppb), the well near Snow White Cleaners showed levels of PCE of 7.1 ppb, the well near Du-Rite had levels of PCE of 1,100 ppb and the well near Carr's Cleaners had a level of PCE of 320 ppb. A well downgradient of Turlock, Snow White and Du-Rite had a level of PCE of 233 ppb.

The dry cleaners were all apparently dumping down the sewer, which had a crack in it downstream of Du-rite, Snow White and Turlock Cleaners. RWQCB sampled each of the dry cleaner's sewer lines upstream and downstream of their connections to the trunk line in order to establish attribution. They were able to establish attribution for all of the sites.

CONTACT CONCURRRENCE: Polly Lowry DATE: 10/15/92

000 00306

CONTACT REPORT

AGENCY/AFFILIATION: California Department of Fish and Game		
DEPARTMENT:		
ADDRESS: 1234 East Shaw Avenue	CITY: Fresno	
COUNTY: Fresno	STATE: CA	ZIP: 93710
CONTACT(S)	TITLE	PHONE
Bob Brueggemann	Wildlife Management	(209) 222-3761
BEI PERSON MAKING CONTACT: Kathryn Curtis KAC		DATE: 10/7/92
SUBJECT: Endangered species, sensitive environments, and sport fishing in Merced and Turlock.		
SITE NAME:	EPA ID:	

DISCUSSION:

Two sensitive environments are found in the Merced and Turlock areas: Riparian wetlands along the San Joaquin, Tuolumne, and Merced rivers; and northern hardpan vernal pools.

Endangered species associated with these environments include:

Delta button celery	Kit fox
Colusa grass	Kangaroo rat
San Joaquin Valley orcutt grass	Swainson's hawk
Colusa grass	Succulent owl's-clover
Greene's tuctoria	Hairy orcutt grass
Migrants: Peregrine falcon, Bald eagle	

Mr. Brueggemann doesn't know of any commercial fishing that occurs along the local rivers. Sports fishing does occur, but the quantity of fish caught is not known.

CONTACT CONCURRRENCE: R H Brueggemann DATE: 10/14/92

~~000 00303~~

000 00326

CONTACT REPORT

AGENCY/AFFILIATION: Turlock Irrigation District		
DEPARTMENT: Water Distribution Department		
ADDRESS: 333 East Canal Drive	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95380

CONTACT(S)	TITLE	PHONE
Will Fryer	Water Distribution Department Manager	(209) 883-8816

BEI PERSON MAKING CONTACT: Gregory R. Carroll GC JS	DATE: 10/13/92
SUBJECT: Irrigation canals and laterals in Turlock area, use of canal water	
SITE NAME: Turlock Region	EPA ID:

DISCUSSION:

Turlock Irrigation District Laterals 3,4,5 and 5-1/2 run through or near Turlock. The irrigation laterals carry surface water diverted from the Tuolumne River, and eventually discharge into the San Joaquin River. The are laterals plus others converge at a drain, located a few miles west of Turlock, which empties directly into the river. The sewage treatment plant discharges its effluent at the start of this drain.

The 1976 USGS map should be sufficient to locate the different laterals. Note Lateral 5-1/2 which branches off of Lateral 5 southwest of Turlock.

Canals go over weirs and waterfalls, so the water is well aerated by the time it reached the drain discharging the San Joaquin River.

Canal water your Turlock is used for irrigation, but not for drinking water. At the head water of the canal system TID provides drinking water to La Grange. All drinking water in the Turlock area comes from groundwater. The nearest drinking water intake downstream of the canal network is believed to be in Stockton.

CONTACT CONCURRRENCE: Urlton Fryer DATE: 3 Nov 92

(with the changes noted)

CONTACT REPORT

AGENCY/AFFILIATION: City of Turlock		
DEPARTMENT: Utilities Department		
ADDRESS: 900 N.Palm St., P.O. Box 1526	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95381
CONTACT(S)	TITLE	PHONE
DAM ~~Don~~ Madden		(209) 668-5590
BEI PERSON MAKING CONTACT: Tonia Cannizzaro TC JJ		DATE: 10/13/92
SUBJECT: City of Turlock stormwater runoff information		
SITE NAME:	EPA ID:	

DISCUSSION:

In Turlock, stormwater runoff flows to Donnelly Storm Pond located in Donnelly Park. Donnelly Park is bordered by Pedras Road, Hawkeye Avenue, and Dels Lane. Storm drains are located throughout the city. Any, overflow from Donnelly Storm Pond flows to irrigation laterals.

Stormwater that has drained into Donnelly Storm Pond is then pumped to Turlock Irrigation District Lateral Number 4 that eventually flows to the San Joaquin River. Lateral 4 is the main lateral in Turlock and flows along Canal Drive.

CONTACT CONCURRRENCE: _____ DATE: _____

CONTACT REPORT

AGENCY/AFFILIATION: California Department of Fish and Game			
DEPARTMENT:			
ADDRESS: 1234 East Shaw Avenue		CITY: Fresno	
COUNTY: Fresno		STATE: CA	ZIP: 93710
CONTACT(S)	TITLE		PHONE
Bob Brueggemann	Wildlife Management		(209) 222-3761
BEI PERSON MAKING CONTACT: Gregory R. Carroll			DATE: 12/1/92
SUBJECT: Sensitive environments and fisheries in the vicinity of Merced, California			
SITE NAME:		EPA ID:	

DISCUSSION:

Sensitive environments in the Merced area include riparian wetlands along Bear Creek, both upstream and downstream of Merced. Endangered species found along Bear Creek include the following:

Delta button celery (state endangered)
Kit fox (federal endangered/state threatened)
Swainson's Hawk (state threatened)
Peregrine falcon (state endangered, federal endangered) *migrant*
Bald eagle (state endangered, federal endangered) *migrant*
Kangaroo rat (state threatened, but may not occur in riparian wetlands)

Fisheries along Bear Creek are minimal. Bear Creek has a very small watershed. During dry seasons, the water found in the creek comes primarily from irrigation runoff. During very wet years, there may be a minor salmon run, but this is a very rare occurrence. The quantity of fish caught from the creeks is not precisely known, but is thought to be small (less than 1,000 pounds per year).

Nearby watercourses such as Black Rascal Creek and Hartley Slough have been extensively rechannelled by the U.S. Army Corps of Engineers. Little is left of the original riparian environments along these watercourses.

CONTACT REPORT (Cont'd)

AGENCY/AFFILIATION: California Department of Fish and Game		
CONTACT(S)	TITLE	PHONE
Bob Brueggemann	Wildlife Management	(209) 222-3761
SITE NAME:	EPA ID: CAD	

DISCUSSION: Cont'd

Endangered species mentioned in the earlier (10/7/92) contact report (i.e., Colusa grass, San Joaquin Valley orcutt grass, Hairy orcutt grass, Succulent owl's clover and Greene's tuctoria) occur in hardpan vernal pools. The pools are located in the uplands along the border of the San Joaquin Valley and the Sierra foothills upstream of Merced. The pools are temporary rainwater ponds with no defined outlet. Concentric rings of plants grow along the ponds as they dry and the edges of the pond recede.

CONTACT CONCURRRENCE: _____ DATE: _____

~~000 00518~~
000 00545

CONTACT REPORT

AGENCY/AFFILIATION: City of Turlock		
DEPARTMENT: ~~Department of Public Works~~ Utilities Dept.		
ADDRESS: P.O. Box 1526	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95381

CONTACT(S)	TITLE	PHONE
Dan Wilde	Water Quality Superintendent	(209) 668-5590

BEI PERSON MAKING CONTACT: Kathryn A. Curtis KAC	DATE: 5/5/93
SUBJECT: Turlock municipal water supplies and local geology	
SITE NAME: N/A	EPA ID:

DISCUSSION:

Groundwater is the only source for the City of Turlock's municipal drinking water supply. The city owns and operates 21 active wells, serving approximately 45,000 people (46,000 minus the number of people served by the Del Este system). The city's system is blended, and no one well contributes more than 40 percent of total production. The city regularly screens its wells for contaminants under Chapter 15, Title 22 regulations.

The only municipal well that has been removed from service due to PCE or TCE contamination is the City of Turlock Well 5 (Well 5). The total depth of the well is approximately 240 feet, but it is probably screened at a shallower depth and has not been sealed properly. Maximum concentrations of 8 to 11 micrograms per liter (µg/l) PCE were detected in water samples from Well 5. When PCE contamination levels in Well 5 regularly exceeded 5 µg/l, the well was taken off-line. At this time, the City of Turlock has not decided whether to treat, or permanently close, Well 5. No other wells in the Turlock area have been affected.

PCE has also been detected in up to two private wells at the Tri Valley Growers cannery located on South Golden State, approximately 0.25 to 0.5 mile from Well 5. However, PCE concentrations in these wells are less than 5 µg/l. Water from these wells is currently used in the canning process. Other private wells are located in the Turlock area but are not tracked by the City of Turlock.

CONTACT REPORT (continued)

AGENCY/AFFILIATION: City of Turlock		
CONTACT(S)	TITLE	PHONE
Dan Wilde	Water Quality Superintendent	(209) 668-5590
SITE NAME: N/A	EPA ID:	

DISCUSSION (continued):

A perched aquifer is present above the Corcoran Clay layer (E clay) in Turlock. Locally, the E clay layer varies in depth and thickness from approximately 20 feet to 150 feet thick. The E clay layer reportedly ends east of Denair, but is thought to be present throughout the Turlock area. Groundwater in the perched aquifer is of poor quality and no City drinking water wells draw from this aquifer. However, Mr. Wilde believes that the Turlock Irrigation District and local farmers may use wells that draw from the perched aquifer. The direction of groundwater flow in the perched aquifer varies from a westerly to southerly flow and has a shallow gradient.

The City of Turlock drinking water wells generally draw from the aquifer below the E clay layer, at depths of approximately 400 to 500 feet below ground surface. However, there appears to localized interconnection between the perched aquifer and the drinking water aquifer near Well 5.

Additional information on Turlock dry cleaners: Snow White Cleaners went out of business in late 1992.

CONTACT CONCURRENCE: _____ DATE: _____

Received from Dan Wilde, with notations. Kathryn Curtis 5/18/93

APPENDIX E

SITE RECONNAISSANCE INTERVIEW AND OBSERVATIONS REPORT

Bechtel Environmental, Inc.
P.O. Box 193965
San Francisco, CA 94119-3965

OBSERVATIONS MADE BY: Trey Johnston and Tonia Cannizzaro DATE: October 15, 1992

FACILITY REPRESENTATIVE(S) and TITLE(S): Mr. and Mrs. Rex Swinney and Dar Swinney

SITE: Du-Rite Cleaners

EPA ID: CAD 981615024

A site reconnaissance was conducted at the site on October 15, 1992. The weather was sunny and the temperature was approximately 70°F. The Bechtel Environmental, Inc. (BEI) team, Trey Johnston and Tonia Cannizzaro, conducted the site reconnaissance with Mr. and Mrs. Rex Swinney and Dar Swinney at 2 p.m. to gather information on the site location and size, site history, processes used, and any hazardous waste generated, treated, stored, or disposed of on site. The reconnaissance included a site tour and interview during which photographs were taken.

The following information was obtained during the site reconnaissance:

The site is located at 141 North Center St., in an area of mixed light industry and residences in the City of Turlock, California. The site is bound to the northeast by an alley and doctor's office, to the southeast by S & H Beauty Supply, to the southwest by North Center Street, and to the northwest by East Olive Street.

According to the Swinneys, the property that Du-Rite Cleaners occupies is owned by Roy Gullo of 1315 Lyons Avenue, Turlock, Calif. The Swinneys have owned the present dry cleaning business at the site since 1970. Previously, the north half of the site was occupied by Western Auto and Paint Store. Mr. Gullo operated the site as a dry cleaners since sometime in the 1950s. Prior to the dry cleaning operations in the 1950s, the site operated as an auto lot.

Currently, the site operates as a commercial laundry facility and has one dry cleaning machine. Du-Rite Cleaners is open for business 6 days a week; however, the dry cleaning machine is only in operation from Monday through Friday. The original dry cleaning unit use by Du-Rite Cleaners has been replaced with a "dry-to-dry" unit that does not require the manual transfer of clothes to a reclaimer. The dry cleaner is a Multimatic Mercury model that cleans the clothing in a solution of tetrachloroethylene, also known as perchloroethylene (PCE), recovers the solvent and further dries the clothing. The PCE used in the cleaning process is filtered in the unit, reclaimed, and reused. No dry cleaning wastewater is discharged into the sewer system at this time.

Two types of hazardous wastes are generated on site by the dry cleaning process: sludge from the "cooker" unit and used filters containing spent PCE. Approximately eight filters are replaced at one time when they have reached their useful life. Five gallons of fresh PCE is added to the dry cleaning machine every 2 weeks. Spent filters and sludge are collected in 55-gallon drums and stored on site. When full, these drums are removed from the site by Technichem. At the time of the Bechtel team's site visit, two 55-gallon drums were present in the building.

Crane School is between 0.25 mile and 0.5 mile from the site. Private residences are less 0.25 mile north of the site. Surface water runoff runs into the municipal sewer system in the street along East Olive. No day care centers are near the site.

Two monitoring wells have been installed near the site, one along East Olive (to the northwest) and a second on East Main Street (to the southeast). These wells are sampled by the California Environmental Protection Agency, Regional Water Quality Control Board, Central Valley Region, once a year. Wastewater produced at the site is sampled at the sewer line along East Olive Street once a quarter.

At the time of the site inspection, the approximate size of the building was 50 feet by 70 feet. Eight people were employed on site. The site is not fenced and is completely paved. No evidence of spills or contamination was evident during the site inspection.

TRANSMITTAL LIST for SI REPORT

Site: Du-Rite Cleaners

Megan Cambridge
Department of Toxic Substances Control
California Environmental Protection Agency
10151 Croydon Way, Suite 3
Sacramento, CA 95827

Philip Isorena
Regional Water Quality Control Board
California Environmental Protection Agency
3443 Routier Rd., Suite A
Sacramento, CA 95827

Rex Swinney
Du-Rite Cleaners
141 North Center St.
Turlock, CA 95380

Roy Gullo
1315 Lyons Ave.
Turlock, CA 95380

Angil Jones, City Attorney
City of Turlock
900 N. Palm St.
Turlock, CA 95380

Dan Wilde
Water Quality Superintendent
City of Turlock Department of Public Works
P.O. Box 1526
Turlock, CA 95381

Bechtel

50 Beale Street
San Francisco, CA 94105-1895
Mailing address: P.O. Box 193965
San Francisco, CA 94119-3965

345 00001

REFERENCES
for
Site Inspection

Site: Du-Rite Cleaners
141 North Center St.
Turlock, CA 95380

Site EPA ID Number: CAD 981615024

Work Assignment Number: 60-15-9J00, ARCSWEST Program

Submitted to: Carolyn Douglas
Site Assessment Manager
EPA Region IX

Thru: Rachel Loftin
EPA Region IX

Date: June 21, 1993

Prepared by: Kathryn A. Curtis

Review and Concurrence: Michele Dermer

REFERENCE LIST

Site: Du-Rite Cleaners

1. U.S. Environmental Protection Agency, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), April 5, 1993.

2. Izzo, Victor, J., California Regional Water Quality Control Board, Central Valley Region, Letter to Paul LaCourreye (with attachments), October 30, 1990.

3. Ecology and Environment, Inc. Preliminary Assessment for Du-Rite Cleaners, May 9, 1991.

4. U.S. Geological Survey, Turlock Quadrangle, California, Stanislaus County, 7.5-minute series (topographic), 1961, Photorevised 1976.

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Site: Du-Rite Cleaners

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19. Lowry, Polly, California Regional Water Quality Control Board, Central Valley Region, Letter (with attachment) to Rex Swinney and Roy Gullo, February 21, 1992.

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REFERENCE LIST (Cont'd)

Site: Du-Rite Cleaners

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31. Brueggemann, Bob, California Department of Fish and Game, Telephone Conversation Recorded on Contact Report by Kathryn Curtis, Bechtel Environmental, Inc., October 7, 1992.

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EPA REGION IX - CERCLIS SITES
LIST-8 CERCLIS LISTING FOR REGION IX
SORTED BY SITENAME

EPA ID NO.	SITE NAME STREET CITY, COUNTY CODE & NAME	STATE ZIP CONG DIST.	EVENT QUALIF	OP UN	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	CURRENT EVENT LEAD
	OXNARD 111 VENTURA	CA 93030 CA-19		00	DS1		06/01/86	STATE(FUND)
			H		PA1	06/01/86	06/01/86	STATE(FUND)
			H		SI1	06/01/86	09/01/86	STATE(FUND)
			N		SI2		02/05/90	EPA (FUND)
CAD980889000	DUNRITE METAL PLATING 3055 CALIFORNIA ST BURBANK 037 LOS ANGELES	CA 91505 CA-22		00	DS1		09/01/85	STATE(FUND)
			N		PA1	08/01/85	02/01/86	STATE(FUND)
AZD983479726	DUPRAS GRINDING 2216 WEST GRANADA ROAD PHOENIX 013 MARICOPA	AZ 85009 AZ-02		00	DS1		11/01/92	STATE(FUND)
CAD014440648	DURA-BOND 3201 ASH ST PALO ALTO 085 SANTA CLARA	CA 94306 CA-11		00	DS1		04/01/85	STATE(FUND)
			N		PA1	09/01/86	09/01/87	STATE(FUND)
CAD982359457	DURA-CHEM INC 1601 MILLER ST ANAHEIM 059 ORANGE	CA 92806 CA-39		00	DS1		12/01/87	STATE(FUND)
			N		PA1		05/02/89	STATE(FUND)
CAD981373905	DURALIFE COMPRESSED FIBERGLASS POTS INC 21100 S ALAMEDA ST LONG BEACH 037 LOS ANGELES	CA 90810 CA-32		00	DS1		02/01/86	STATE(FUND)
			N		PA1	01/01/86	05/01/86	STATE(FUND)
CAD982359515	DURAN CO 1773 W LINCOLN AVE #1 ANAHEIM 059 ORANGE	CA 92801 CA-38		00	DS1		12/01/87	STATE(FUND
			N		PA1		08/01/88	STATE(FUND
CAD981615024	DURITE CLEANERS							

REFERENCE 1

EPA REGION IX - CERCLIS SITES
LIST-8 CERCLIS LISTING FOR REGION IX
SORTED BY SITENAME

EPA ID NO.	SITE NAME STREET CITY, COUNTY CODE & NAME	STATE ZIP CONG DIST.	EVENT QUALIF	OP UN	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	CURRENT EVENT LEAD
	141 N. CENTER ST. TURLOCK 099 STANISLAUS	CA 95380 CA-12		00	DS1		12/12/90	EPA (FUND)
			H		PA1		05/28/91	EPA (FUND)
NVD041129404	DUVAL CORP MINE SITE COPPER CYN BATTLE MOUNTAIN 015 LANDER	NV 89820 NV-02		00	DS1		06/01/80	EPA (FUND)
			N		PA1	01/01/86	07/01/87	STATE(FUND)
AZD041456583	DUVAL CORP MINERAL PARK PROP ON HWY 93 14 MI W OF KINGMAN KINGMAN 015 MOHAVE	AZ 86401 AZ-03	N	00	SI1		09/01/82	EPA (FUND)
					DS1		12/01/79	EPA (FUND)
			H		PA1		09/01/82	EPA (FUND)
AZ8141190076	DUVAL CORP/ESPERANZA MINE 6200 DUVAL MINE RD/ NOGALES HWY. SAHUARITA 019 PIMA	AZ 85614 AZ-05		00	DS1		12/01/79	FED. FAC.
			L		PA1		06/01/83	FED. FAC.
			L		PA2		06/26/91	FED. FAC.
			N		SI1		06/01/88	FED. FAC.
CAD066654096	DVH CORPORATION 16117 LEADWELL VAN NUYS 037 LOS ANGELES	CA 91406 CA-23		00	DS1		01/01/91	EPA (FUND)
			D		PA1		08/02/91	EPA (FUND)
CAD009520578	DYER H E PLATING INC 16424 MINNESOTA AVE PARAMOUNT 037 LOS ANGELES	CA 90723 CA-31		00	DS1		07/01/85	STATE(FUND)
			N		PA1	07/01/85	10/01/85	STATE(FUND)
AZD982503385	DYNACO WEST 1000 S. PRIEST TEMPE 013 MARICOPA	AZ 85281 AZ-01		00	DS1		08/02/91	EPA (FUND)

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION
3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098

GEORGE DEUKMEJIAN, Gover

REFERENCE 2

30 October 1990

Mr. Paul LaCourreye H-8-1
Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

DRY CLEANERS UNDER INVESTIGATION BY CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

As you requested, attached is a list of dry cleaners under investigation, except for those in the City of Merced. Some of these sites have monitoring wells and have confirmed ground water degradation. The other sites are likely sources of ground water degradation with evidence of discharge to the soils.

Should you have any questions, please call me at (916) 361-5648.

VICTOR J. IZZO
Associate Engineering Geologist

Attachment

VJI:ej

DRY CLEANERS UNDER INVESTIGATION BY CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

Orland

Orland Cleaners
725-5th
Orland, CA 95963

Patterson

Westside Cleaners & Laundry
420 Del Puerto Avenue
Patterson, CA 95363

Turlock

Turlock Cleaners
429 E. Main Street
Turlock, CA 95380

Durite Cleaners
141 N. Center Street
Turlock, CA 95380

Carr's Cleaners
500 E. Main Street
Turlock, CA 95380

Snow White Cleaners
352 E. Olive Street
Turlock, CA 95380

Bright Cleaners
691 N. Golden State Blvd
Turlock, CA 95380

Roseville

Deluxe Cleaners
404 Vernon Street
Roseville, CA 95678

Tillet Cleaners
97 Vernon Street
Roseville, CA 95678

Sacramento

Southgate Norge Cleaners
7131 Governors Circle
Sacramento, CA 95823

Lodi

Guild Cleaners
17 S. Church Street
Lodi, CA 95240

Busy Bee Laundry
40 N. Main Street
Lodi, CA 95240

Information extracted from:

Ecology and Environment, Inc., Preliminary Assessment for Du-Rite Cleaners, May 9, 1991.

(See CERCLA folder)

Information extracted from:

U.S. Geological Survey, Turlock Quandrangle, California-Stanislaus Co., 7.5-Minute Series (topographic), 1961, Photorevised 1976.

APPENDIX E

SITE RECONNAISSANCE INTERVIEW AND OBSERVATIONS REPORT

Bechtel Environmental, Inc.
P.O. Box 193965
San Francisco, CA 94119-3965

OBSERVATIONS MADE BY: Trey Johnston and Tonia Cannizzaro DATE: October 15, 1992

FACILITY REPRESENTATIVE(S) and TITLE(S): Mr. and Mrs. Rex Swinney and Dar Swinney

SITE: Du-Rite Cleaners

EPA ID: CAD 981615024

A site reconnaissance was conducted at the site on October 15, 1992. The weather was sunny and the temperature was approximately 70°F. The Bechtel Environmental, Inc. (BEI) team, Trey Johnston and Tonia Cannizzaro, conducted the site reconnaissance with Mr. and Mrs. Rex Swinney and Dar Swinney at 2 p.m. to gather information on the site location and size, site history, processes used, and any hazardous waste generated, treated, stored, or disposed of on site. The reconnaissance included a site tour and interview during which photographs were taken.

The following information was obtained during the site reconnaissance:

The site is located at 141 North Center St., in an area of mixed light industry and residences in the City of Turlock, California. The site is bound to the northeast by an alley and doctor's office, to the southeast by S & H Beauty Supply, to the southwest by North Center Street, and to the northwest by East Olive Street.

According to the Swinneys, the property that Du-Rite Cleaners occupies is owned by Roy Gullo of 1315 Lyons Avenue, Turlock, Calif. The Swinneys have owned the present dry cleaning business at the site since 1970. Previously, the north half of the site was occupied by Western Auto and Paint Store. Mr. Gullo operated the site as a dry cleaners since sometime in the 1950s. Prior to the dry cleaning operations in the 1950s, the site operated as an auto lot.

Currently, the site operates as a commercial laundry facility and has one dry cleaning machine. Du-Rite Cleaners is open for business 6 days a week; however, the dry cleaning machine is only in operation from Monday through Friday. The original dry cleaning unit use by Du-Rite Cleaners has been replaced with a "dry-to-dry" unit that does not require the manual transfer of clothes to a reclaimer. The dry cleaner is a Multimatic Mercury model that cleans the clothing in a solution of tetrachloroethylene, also known as perchloroethylene (PCE), recovers the solvent and further dries the clothing. The PCE used in the cleaning process is filtered in the unit, reclaimed, and reused. No dry cleaning wastewater is discharged into the sewer system at this time.

Two types of hazardous wastes are generated on site by the dry cleaning process: sludge from the "cooker" unit and used filters containing spent PCE. Approximately eight filters are replaced at one time when they have reached their useful life. Five gallons of fresh PCE is added to the dry cleaning machine every 2 weeks. Spent filters and sludge are collected in 55-gallon drums and stored on site. When full, these drums are removed from the site by Technichem. At the time of the Bechtel team's site visit, two 55-gallon drums were present in the building.

Crane School is between 0.25 mile and 0.5 mile from the site. Private residences are less 0.25 mile north of the site. Surface water runoff runs into the municipal sewer system in the street along East Olive. No day care centers are near the site.

Two monitoring wells have been installed near the site, one along East Olive (to the northwest) and a second on East Main Street (to the southeast). These wells are sampled by the California Environmental Protection Agency, Regional Water Quality Control Board, Central Valley Region, once a year. Wastewater produced at the site is sampled at the sewer line along East Olive Street once a quarter.

At the time of the site inspection, the approximate size of the building was 50 feet by 70 feet. Eight people were employed on site. The site is not fenced and is completely paved. No evidence of spills or contamination was evident during the site inspection.

Memorandum

REFERENCE 6

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD • CENTRAL VALLEY REGION

3443 Routier Road
Sacramento, California 95827-3098

Phone: (916) 361-5600
ATSS: 8-495-5600

TO: Jerrold A. Bruns
Senior Land and Water Use Analyst

FROM: Polly Lowry
Associate Engineering Geologist
Well Investigation Program

DATE: 20 December 1989

SIGNATURE: Polly Lowry

SUBJECT: INVESTIGATION OF DU RITE CLEANERS AS A SOURCE OF PCE CONTAMINATION IN TURLOCK MUNICIPAL WELL 1 AND TRI-VALLEY GROWERS WELLS 1 AND 2

As part of an investigation into the source(s) of contamination of tetrachloroethylene (PCE) in Turlock Municipal Well 1 and Tri-Valley Growers Wells 1 and 2, the Regional Board inspected facilities in the surrounding area that are likely sources of this volatile organic compound. In addition, a soil gas survey was conducted to further identify sources and to determine the lateral extent of the contamination. Since PCE is typically used at dry cleaning facilities and is commonly discharged from these facilities to the sewer via cooling water, separator water, or reclaimer water wastes, the sewers were sampled near one old dry cleaner and the five dry cleaners which are currently operating within the area of this investigation. One of these facilities, Du Rite Cleaners at 141 N. Center Street, is the subject of this memo.

Regional Board staff inspected Du Rite Cleaners on 30 January 1989. This facility has been in operation for about 30 years. The current operator, Mr. Swinney, has operated the facility for 15 years. Approximately 60 gallons of new PCE are added to a storage tank at the base of the cleaning machine each month. Residual solvent on the cleaned clothes is extracted in one of the two reclaimers on the premises and then collected and returned to the storage tank of the dry cleaning machine. Condensed water from the reclaimer and the sniffer is collected in plastic containers and then used in a spot remover solution. A sample was taken from each container for laboratory analysis. Water from the first reclaimer had 125,000 µg/L PCE. A sample from the second reclaimer had 14,000 µg/L PCE. This sample had condensed water from the sniffer in it also. Since water from these containers is not discharged to the sewers it is only a cause for concern because of the possibility of spills. Used solvent is cleaned by running it through a series of filters to remove contaminants and then into a cooker for further purification. Sludge from the cooker is emptied into a bucket and transferred to a drum supplied by Safety Kleen. Used filter cartridges are also placed in the Safety Kleen containers. There are no underground tanks at this site. The floor of the facility is concrete with one small floor drain present near the dry cleaning machine. Although this drain has a raised rim approximately one inch high which decreases the chances of spilled PCE flowing into the sewer, cooling water from each of the two reclaimers, the cooker, and cooling water for the solvent are all discharged into this drain. A sample of each of these was collected for analysis on 29 November 1989. 6.3 µg/L, 5.3 µg/L, 4.7 µg/L, and 1.7 µg/L PCE were detected in the cooling water from the cooker, cooling water for the solvent, and cooling water for reclaimer # 1 and reclaimer #2, respectively.

In February 1989 44 PETREX soil gas tubes were placed in the soil around facilities thought to be possible sources of PCE. Fifteen additional tubes were placed in May 1989 and eight additional tubes were placed in August 1989. These tubes were left in the soil for six to seven weeks, after which they were removed and immediately sent to PETREX Laboratory for volatile organic chemical (VOC) analysis. The results, in terms of ion counts, are not absolute concentrations, but a time-weighted flux of VOC's in the soil gas. As such, the ion counts are proportional to the VOC's in the soil moisture and, in some cases, shallow ground water. The attached map shows that there is a PCE "hotspot" at Du Rite Cleaners and Snow White Cleaners. Background levels of PCE in the soil gas north of these facilities range from 7,000 to 8,000 ion counts, while levels near them are as high as 246,000 ion counts. Since these two cleaners are next door to one another, it is difficult to distinguish the source of the soil contamination from the results of this survey. Diminishing levels of PCE to the southeast show that a plume of PCE contaminated soil gas is moving from Du Rite Cleaners and Snow White Cleaners in that direction.

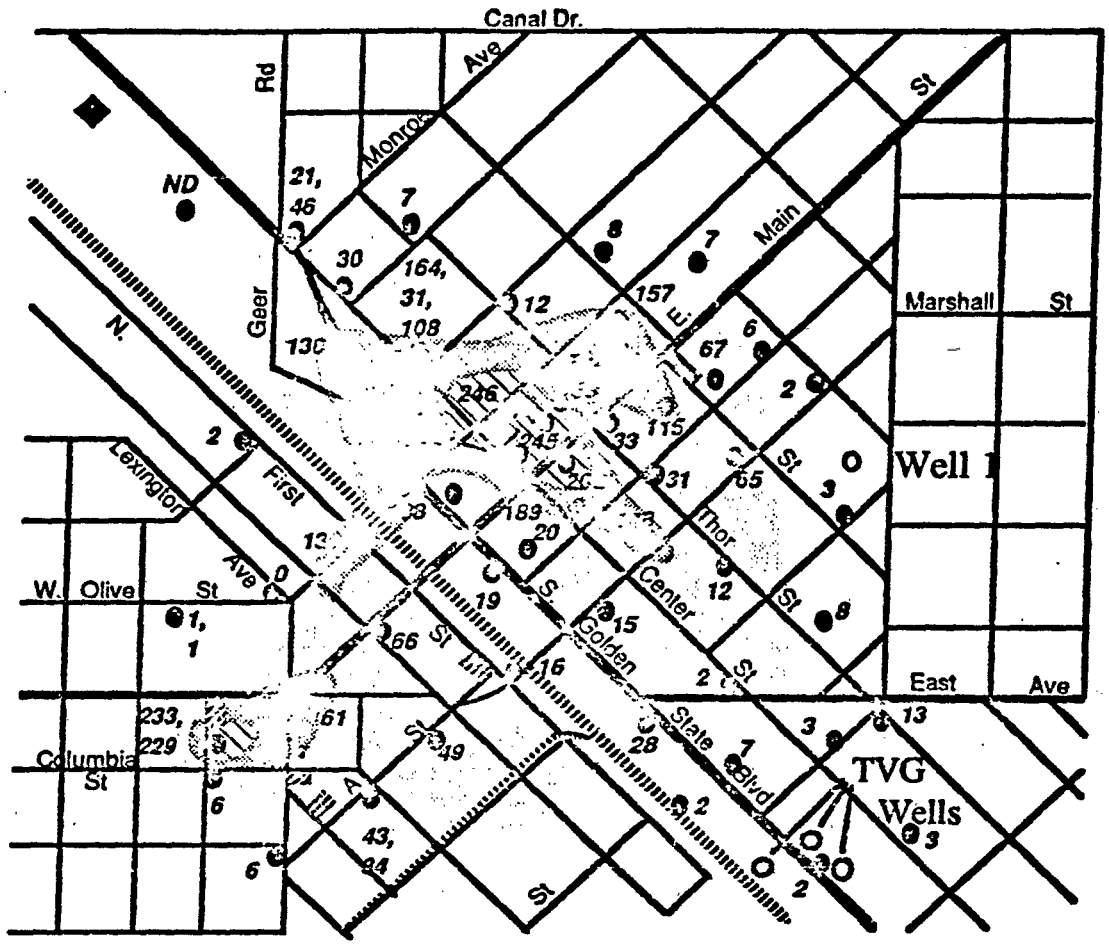
On 22 September 1989 two ambient (undisturbed) sewer samples and one flush sewer sample were collected near Du Rite Cleaners. The first ambient sample, taken as a background level of PCE in the sewer, was collected from the sewer manhole upstream of Du Rite's lateral into the main sewer line. 35 µg/L PCE was detected in this sample. The second ambient sample was collected from the first manhole which is downstream of Du Rite's lateral into the main sewer line. This sample had 120 µg/L trichloroethylene (TCE) and 190 µg/L PCE. TCE may be present as an impurity in the perc formulation, or more likely, as a breakdown product of PCE. The increase in TCE and PCE in this sample above the background ambient sample indicates discharges of at least PCE, and perhaps TCE, into the sewer. The sewer was then flushed by injecting water into the sewer in an upstream direction from the first manhole downstream of Du Rite's lateral into the sewer. The flush sample was collected as this water flowed back towards the manhole. 41 µg/L methylene chloride, 120 µg/L chloroform, and 210 µg/L TCE were detected in this sample. Where dense chlorinated solvents such as PCE and TCE have collected on the bottom of the sewer line, concentrations of these chemicals typically rise above ambient concetntrations upon flushing. The increased levels of TCE in the flushed sample relative to that in the ambient sample indicates accumulation of TCE on the bottom of the sewer. In addition, the high levels in the ambient sample taken downstream of Du Rite Cleaners indicate discharges of PCE to the sewer from this facility.

SUMMARY AND CONCLUSIONS:

In summary, the Regional Board investigation has shown that PCE is discharged to the sewer line from Du Rite Cleaners and, at least its breakdown product TCE, has accumulated on the bottom of the sewer. In addition, the soil gas survey indicates that PCE from this site has likely contaminated the soil and perhaps the ground water.

Since contamination of nearby ground water (Turlock Municipal Well 1 and Tri-Valley Growers Wells 1 and 2) has been confirmed, it is recommended that Du Rite Cleaners provide a proposal to determine the extent of soil and ground water contamination at their facility. In addition, it is recommended that the city inspect the integrity of the main sewer line near Du Rite Cleaners, sample soils near any significant leaks in the sewer, and repair any significant leaks.

1989 TURLOCK SOIL GAS SURVEY



Soil gas tube location. Numbers indicate PCE ion counts (in thousands). Two or more numbers indicate repeat samples.

Currently active dry cleaners.

Old dry cleaners.

10,000 -100,000 PCE ion counts

100,000-200,000 PCE ion counts

>200,000 PCE ion counts

SCALE

0 1/2

MILES

N

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD

INSPECTION REPORT

DISCHARGER: Du Rite Cleaners

LOCATION & COUNTY: 141 N. Center Street, Turlock, Stanislaus County

CONTACT(S): Mr. Rex Swinney

INSPECTION DATE: 29 November 1989

INSPECTED BY: Polly Lowry, Associate Engineering Geologist, RWQCB

ACCOMPANIED BY: Mr. Rex Swinney, Du Rite Cleaners
Mr. Dan Wilde, City of Turlock

OBSERVATIONS AND COMMENTS:

On 29 November 1989 I inspected Du Rite Cleaners in Turlock. Sara Denzler had already inspected the facility on 30 January 1989. Her inspection report noted that cooling water was discharged to the sewer, but since none was being discharged at the time of the inspection she could not sample it. The purpose of my inspection was to collect a sample of this water. Dan Wilde was also there to discuss with Mr. Swinney the city's request for the facility to install a device allowing the city to sample what is going into the facility's sewer lateral.

Cooling water from four different locations were discharging into the floor drain near the dry cleaning machine at the time of the inspection. Three of these discharges were from small diameter metal pipes, while one was from a rubber hose. Samples were collected from each discharge and identified as follows:

Du Rite 1 - Cooling water from the still (cooker)
Du Rite 2 - Cooling water for the solvent
Du Rite 3 - Cooling water from #1 Reclaimer (35 lb capacity)
Du Rite 4 - Cooling water from #2 Reclaimer (50 lb capacity)
Du Rite 5 - Travel Blank

One other floor drain was noted during the inspection. This drain receives blow down water from the boiler. A water cooler/faucet next to the floor drain was leaking water into the drain at the time of the inspection. Mr. Swinney also mentioned that the floor (cement) is washed down into this drain. Dan Wilde suggested that the casing of the drain be raised above the floor level to prevent spills from going down the drain.

Before Du Rite began having its wastes hauled away by Roehl Company in about 1986 separator water was also discharged to the sewer, as was sludge from the cooker. Mr. Swinney said these discharges took place about six or seven years ago. After Roehl went out of business Mr. Swinney had Safety Kleen pick up the wastes. At the present time cooker sludge is disposed of in one of four or five 15-gallon Safety Kleen drums. The cooker is operated about four days per week and generates about one to one-and-a-half gallons of sludge per week. Separator water is collected in five gallon buckets at a rate of about two gallons per week and placed in the boiler room for evaporation. Perc remaining in the bottom of the bucket is either used as a spot remover or placed in one of the Safety Kleen containers. Four to five waste drums are hauled off by Safety Kleen each month.

REFERENCE 8

ETS ENVIRONMENTAL & ASSOC.
351 N. WALNUT ST., STE. 5
TURLOCK, CA 95380
(209) 667-6463

SITE ASSESSMENT REPORT

FOR:
TURLOCK DRY CLEANERS SITES
(DURITE, SNOW WHITE, & TURLOCK CLEANERS)
141 EAST MAIN STREET
352 EAST OLIVE STREET
429 EAST MAIN STREET
TURLOCK, CA 95380

ETS PROJECT NUMBERS:
200190
200290
200390

JANUARY 17, 1991

1.0 INTRODUCTION

The following Assessment report contains the results of ETS ENVIRONMENTAL's investigation of soil and groundwater contamination in the area of three dry cleaners' facilities located in Turlock, California. The names, addresses, and owners of the three facilities are as follows:

Durite Cleaners: 141 East Main Street, Turlock, CA 95380
Mr. Rex Swinney

Snow White Cleaners: 352 East Olive Street, Turlock, CA 95380 - Mr. Bill Jacobsen

Turlock Cleaners: 429 East Main Street, Turlock CA 95380
Mr. Gordon Teekell

This assessment report is required by the California Regional Water Quality Control Board, Central Valley Region, and was completed by ETS ENVIRONMENTAL at the request of Mr. Swinney, Mr. Jacobsen, and Mr. Teekell.

Five monitoring wells were installed between July 10, 1990 and December 14, 1990 in an attempt to define the lateral and vertical extents of soil and groundwater contamination in the sites' area. The assignment of monitoring wells is as follows:

Durite Cleaners: MW-1

Snow White Cleaners: MW-2, MW-5

Turlock Cleaners: MW-3, MW-4

Soil samples were collected at all possible five-foot intervals to the depth of shallow groundwater during the soil boring phase of monitoring well construction. Geologic samples were obtained on a continuous basis.

information may be found in Appendix E.

TABLE 1

GROUNDWATER ELEVATION MEASUREMENTS

Date	Well#	Reference Point Elevations	Depth To Water	Groundwater Elevation
12-18-90	MW-1	102.17'	16.7'	85.47'
12-18-90	MW-2	102.27'	16.4'	85.87'
12-18-90	MW-3	103.02'	16.4'	86.62'
12-18-90	MW-4	101.94'	15.3'	86.64'
12-18-90	MW-5	103.03'	18.0'	85.03'

* Based on Benchmark, TBIN # 14-2-4.

2.4 POSSIBLE SOURCE DETERMINATION

Evidence gathered in the course of this site investigation would seem to indicate that Durite Cleaners, Snow White Cleaners, and Turlock Cleaners have all contributed to the contamination plume beneath the area of the three sites. In support of the CVRWQCB's hypothesis, the path for the introduction of contaminants seems likely to have been caused by failure of the sewer line. In the past, local dry-cleaning establishments were allowed to discharge wastes which commonly contained residual PCE and TCE into the sewer system.

3.0 FIELD INVESTIGATION

3.1 WELL LOCATIONS

Five monitoring wells were installed in the vicinity of the three dry cleaners, including one each at the individual

samples for the purpose of lithologic determination were taken on a continual basis.

The soil samples were collected using a California Modified split-spoon sampler with brass liners. The sampler was driven by a 140-pound hammer repeatedly falling 30 inches (ASTM Standard 1586).

The laboratory samples were not allowed to have head-space and were immediately sealed in their liners using aluminum foil-lined plastic caps taped in place.

4.0 FINDINGS OF THE INVESTIGATIONS

4.1 LITHOLOGY

Characteristics of the aquifers and occurrence of groundwater at the Turlock City site are typical for the San Joaquin Valley Ground Water Basin. The site is situated on alluvial fan sediments in the Central Valley Geomorphic Province of California. The sites are underlain by alternating layers of sand, silt, and clay soils. Soils at these sites are predominantly sands. (See Appendix C; Well Boring Logs and Appendix D; Geologic Cross Sections.)

No visual signs or smell of contamination were observed at any time during this investigation.

4.2 ANALYTICAL RESULTS

Four soil samples were collected during the installation of MW-4 and on July 10, 1990. On July 12, 1990, three soil samples were collected during the installation of MW-3.

Three soil samples were collected from MW-2 on July 17, 1990. Two soil samples were collected from MW-1 on July 18, 1990. Three soil samples were obtained during the installation of MW-5 on December 14, 1990 (Appendix A). As required by the California Regional Water Quality Control Board, all soil samples were analyzed by a certified analytical laboratory for volatile organic compounds using EPA method 8010.

Water samples were collected on July 31, 1990 from MW-1, August 8, 1990 from MW-3 and MW-4, August 8, 1990 from MW-2, and December 27, 1990 from MW-5 (Appendix B). As required by the California Regional Water Quality Control Board, all water samples were analyzed by a certified analytical laboratory for volatile organic compounds using EPA method 601.

For a listing of the constituents tested and their corresponding results, please see Tables 3 and 4 and Appendices A and B.

TABLE 3
SOIL SAMPLE ANALYSES

Well #	Depth	PCE Concentration	TCE Concentration
MW-1	5.0 ft	ND	ND
MW-1	9.5 ft	84.0 ppb	2.1 ppb
MW-2	5.0 ft	ND	1.2 ppb
MW-2	10.5 ft	16.0 ppb	ND
MW-2	15.0 ft	ND	ND
MW-3	5.0 ft	ND	ND
MW-3	9.5 ft	5.8 ppb	ND
MW-3	16.5 ft	2.8 ppb	ND
MW-4	5.0 ft	ND	ND
MW-4	9.5 ft	ND	ND
MW-4	15.0 ft	ND	ND
MW-4	19.5 ft	ND	ND
MW-5	5.5 ft	ND	ND
MW-5	9.5 ft	ND	ND
MW-5	15.5 ft	ND	ND

ND = Non-detected

Well #	Depth	Other Constituent Detected	Concentration
MW-1	9.5 ft	Trans-1,2-Dichloroethene	0.8 ppb

TABLE 4
GROUNDWATER
SAMPLE ANALYSES

Well #	PCE Concentration	TCE Concentration
MW-1	1100.0 ppb	62.0 ppb
MW-2	7.1 ppb	ND
MW-3	22.0 ppb	ND
MW-4	ND	ND
MW-5	233.0 ppb	ND

Well #	Other Constituent Detected	Concentration
MW-1	Cis-1,2-Dichloroethene	52.0 ppb
MW-1	Chloroform	1.7 ppb

APPENDIX C

WELL BORING
AND
CONSTRUCTION LOG

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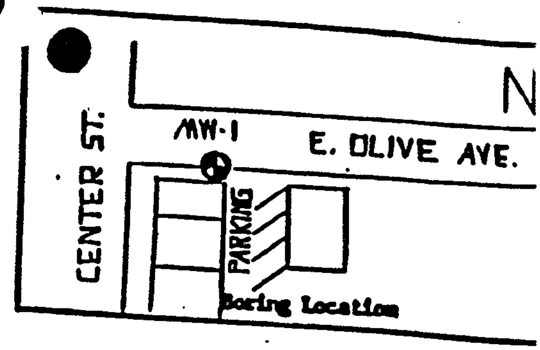

BORING NUMBER MW-1 DATE 7-18-90
Project No. 200190 Project Name DURITE CLEANERS
Total Depth 32' Dia. of Hole 2" Surface Elev. ____ Water Level 16'
Drilling Co. SIERRA Driller DAVE TRUSKOFF
Drilling Method HOLLOW STEM AUGER Geologist LOIS FRANTZ

DEPTH	STRIKE	WELL CONSTR.		ODOR	U.S.C.	Description
	7		TRAFFIC BOX + SEAL	NO		
5	5					
	4		Bentonite Pellets 7 to 2 feet		SM	5.5' SILTY SAND MEDIUM BROWN MOIST NOT PLASTIC
6	2					
7	3		Cement Slurry 2 to 0 feet			
8	0 2					WT. OF RODS
9	2					
10	2 3					
11	2					
12	0 1 1					WT. OF RODS
13					SP	13.5' GRAVELY SILTY SAND
	0					NO SAMPLES 14.5',
14	4 4					
15		SAND				
16	7	SAND			SW	SAND WET GROUND WATER 16'

REGISTERED PROFESSIONAL ENGINEER STEVEN S. RAN... No. 37... Exp. ...-22 CIVIL STATE OF CALIFORNIA

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SEE PAGE ONE

Boring Location

BORING NUMBER MW-1 DATE 7-18-90

Project No. 200190 Project Name DURITE CLEANERS

Total Depth 32' Dia. of Hole 2" Surface Elev. _____ Water Level 16'

Drilling Co. sierra Driller dave truskoff

Drilling Method HOLLOW STEM AUGER Geologist LOIS FRANTZ

DEPTH	STRIKE	WELL CONSTR.		ODOR	U.S.C.	Description
	6				SW	
17	14					NO SAMPLES
18	2				CL	CLAY
19	17					
20	21				SW	NO SAMPLE AT 19.5' HEAVING SAND
21						
22						
23						
24						
25						
26						
27						
28						

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SEE PAGE ONE

Boring Location

BORING NUMBER MW-1 DATE 7-18-90

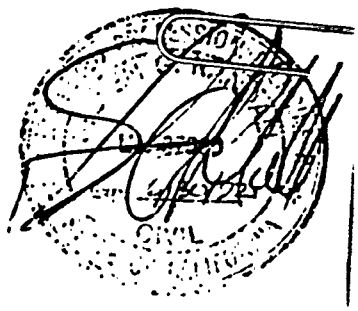
Project No. 200190 Project Name DURITE CLEANERS

Total Depth 32' Dia. of Hole 2" Surface Elev. _____ Water Level 16'

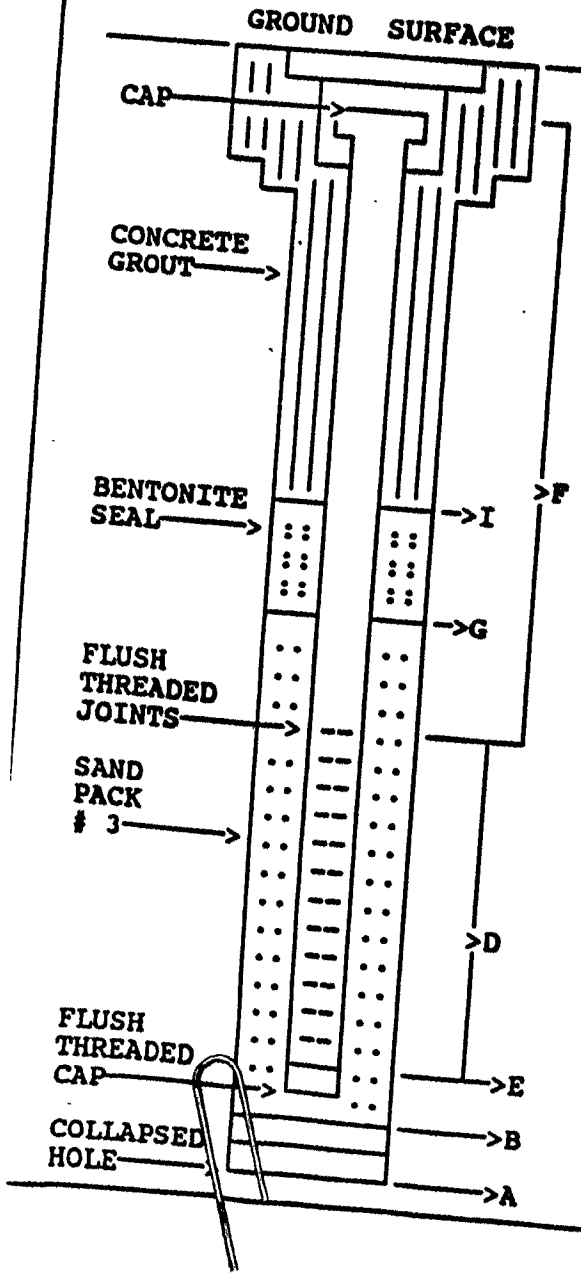
Drilling Co. SIERRA Driller DAVE TRUSKOFF

Drilling Method HOLLOW STEM AUGER Geologist LOIS FRANTZ

DEPTH	STRIKE	WELL CONSTR.		ODOR	U.S.C.	Description
29					SW	
					CL	CLAY WITH GRAVEL GRAY GREEN MOIST PLASTIC
30						
31						
32			END CAP			TOTAL DEPTH 32'



MONITORING WELL DIAGRAM



WELL NO. - 1

DATE CONSTRUCTED - 7-18-90

PROJECT NO. - 200190

	MEASUREMENTS
A. TOTAL DEPTH DRILLED	(A) 32'
B. DEPTH OF OPEN HOLE (SAME AS TOTAL DEPTH DRILLED IF NO [illegible] OCCURS)	(B) 32'
C. [illegible]GE OF HOLE COLLAPSED	
D. LENGTH OF SLOTTED CASING INSTALLED	(C) 0'
E. DEPTH OF BOTTOM OF CASING	(D) 20'
F. LENGTH OF BLANK CASING	(E) 32'
G. DEPTH TO TOP OF SAND PACK	(F) 12'
H. FOOTAGE OF SAND PACK	(G) 7'
I. DEPTH TO TOP OF BENTONITE SEAL	(H) 25'
J. THICKNESS OF BENTONITE SEAL	(I) 2'
K. THICKNESS OF CONCRETE GROUT	(J) 5'
	(K) 2'

1. BORING DIAMETER	(1) 6 3/4"
2. CASING SIZE/SLOTTING	(2) 2" OD/0.020"
3. TYPE OF CASING	(3) Schedule 40 PVC
4. NUMBER OF BAGS OF SAND	(4) 6
5. ELEVATION	(5) -----
6. DEPTH TO FREE-PRODUCT	(6) -----
7. DEPTH TO GROUND WATER	(7) 16.7'
8. THICKNESS OF FREE PRODUCT	(8) -----
9. DATE OF MEASUREMENTS	(9) 12-18-90

FIGURE - 3

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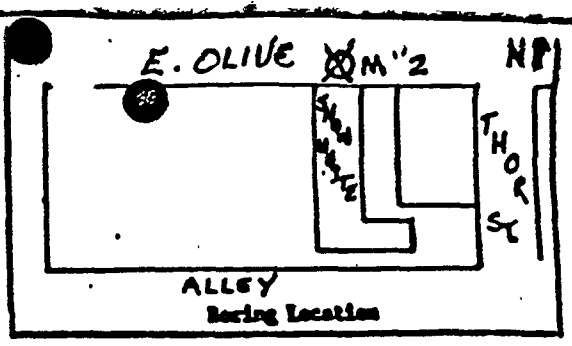

BORING NUMBER MW-2 DATE 7-17-90

Project No. 200390 Project Name Snow White Cleaners

Total Depth 29' Dia. of Hole 8' Surface Elev. _____ Water Level 16½'

Drilling Co. Sierra Drilling Driller Dave Truskoff

Drilling Method Hollow Stem Auger Geologist Lois Frantz

Depth	Sample	Well Construction	Odor	U.S.C.	Description
0			No		4½" Asphalt
4	11			ML	Sandy Silt Gray Green Dry Not Plastic
5	16				Lab Sample 5'
	22				No Sample 5½'
6				SM	Silty Sand Lt. Brown Moist
	12				
7	8				
	8				No Sample 7½', 8'
8					
	16				
9	18				
	23				
10					
	18				Lab Sample 10½' Med. Brown
11	14				
	17				
12					
	8				
13	12				
	10				
14				SW	Well graded sand Wet
	9				Lab Sample 15'
15	15				
	12				

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See page 1

Boring Location

BORING NUMBER MW-2 DATE 7-17-90

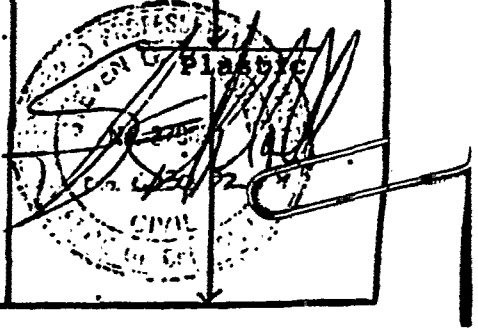
Project No. 200390. Project Name Snow White Cleaners

Total Depth 29' Dia. of Hole 8" Surface Elev. _____ Water Level 16½'

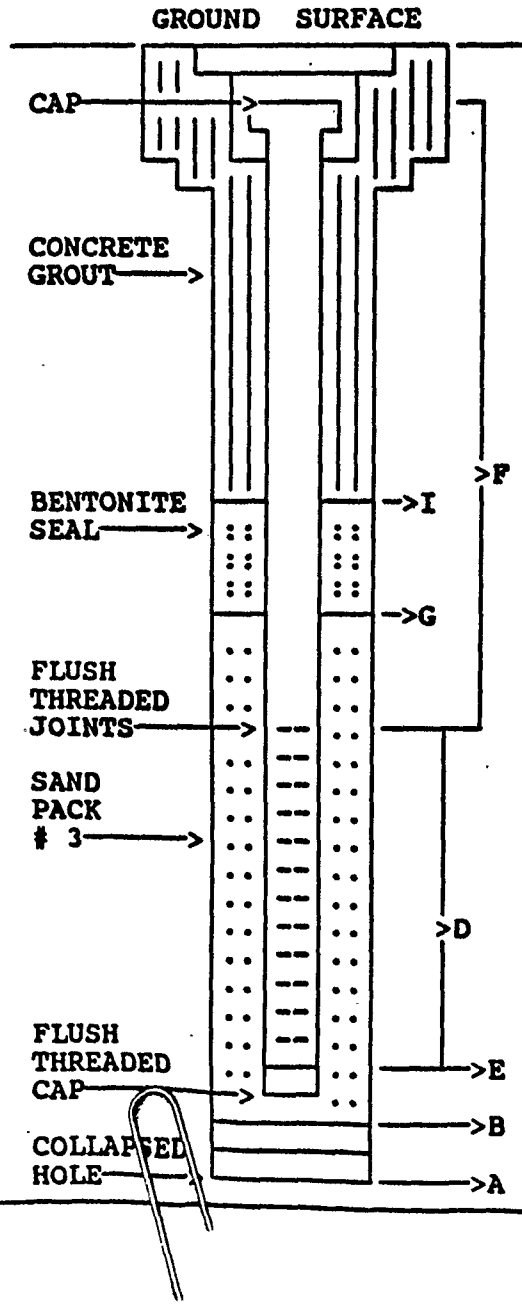
Drilling Co. Sierra Drilling Driller Dave Truskoff

Drilling Method Hollow Stem Auger Geologist Lois Frantz

Depth	Strike	Well Constr.	Odor	U.S.C.	Description
16			NO		▽Ground Water 16½'
17				SM	Silty Sand Med. Green Brown Wet Not Plastic
18				SW	Well graded sand (heaving)
19					
20					
21					
22					
23					
24				CL	Silty Clay Plastic
25				SW	Well graded sand Not Plastic
26				CL	Silty Clay Plastic
27					Gravely Clay Med. Brown
28					
29					Total Depth 29'



MONITORING WELL DIAGRAM



WELL NO. - 2 DATE CONSTRUCTED - 7-17-90

PROJECT NO. - 200390

	MEASUREMENTS
A. TOTAL DEPTH DRILLED	(A) 29'
B. DEPTH OF OPEN HOLE (SAME AS TOTAL DEPTH DRILLED IF NO CAVING OCCURS)	(B) 29'
C. FOOTAGE OF HOLE COLLAPSED	(C) 0'
D. LENGTH OF SLOTTED CASING INSTALLED	(D) 20'
E. DEPTH OF BOTTOM OF CASING	(E) 29'
F. LENGTH OF BLANK CASING	(F) 9'
G. DEPTH TO TOP OF SAND PACK	(G) 9'
H. FOOTAGE OF SAND PACK	(H) 20'
I. DEPTH TO TOP OF BENTONITE SEAL	(I) 5'
J. THICKNESS OF BENTONITE SEAL	(J) 4'
K. THICKNESS OF CONCRETE GROUT	(K) 5'

1. BORING DIAMETER	(1)	6 3/4"
2. CASING SIZE/SLOTTING	(2)	2" OD/0.020"
3. TYPE OF CASING	(3)	Schedule 40 PVC
4. NUMBER OF BAGS OF SAND	(4)	6
5. ELEVATION	(5)	-----
6. DEPTH TO FREE-PRODUCT	(6)	-----
7. DEPTH TO GROUND WATER	(7)	16.4'
8. THICKNESS OF FREE PRODUCT	(8)	-----
9. DATE OF MEASUREMENTS	(9)	12-18-90

FIGURE - 4

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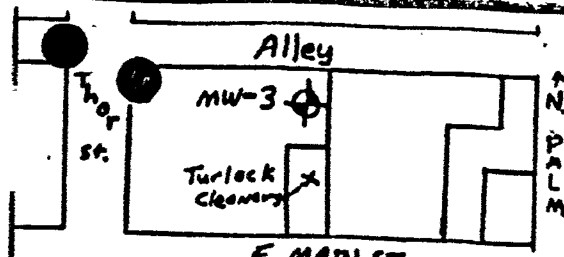

Boring Location

BORING NUMBER MW-3 DATE 7/12/90

Project No. 200290 Project Name Turlock Cleaners

Total Depth 35.5' Dia. of Hole 8" Surface Elev. --- Water Level 18.5'

Drilling Co. Sierra Drilling Driller Dave Truskoff/Paul Pierson

Drilling Method Hollowstem Auger Geologist Lois Frantz

DEPTH	STRIKE	WELL CONSTR.		ODOR	U.S.C.	Description
			Street Box			
	2		Cement Slurry	NO	SM	Asphalt Moist Silty Sand
5	2					5' Lab Sample
	2					
6						Silty Sand - Reddish Brown
	2					Silty Sand- Reddish Brown
7	2					No Samples
	1					
8	4					
						Silty Sand - Orange Brown
9	6					" - Yellow Brown
	7					9.5 Lab Sample
10	5					
						Silty Sand
11	4				ML	Sandy Silt/some Gravel - Reddish Brown Slightly Plastic
	14					
12	18					Perched Water Encountered at13 - 14 feet
13	16				SM	Silty Sand (no Gravel)
	16					
14	12				CL	Sandy Clay - some Gravel
15	14					
	15					15.5' No Lab Sample
16					SW	Heaving Sands

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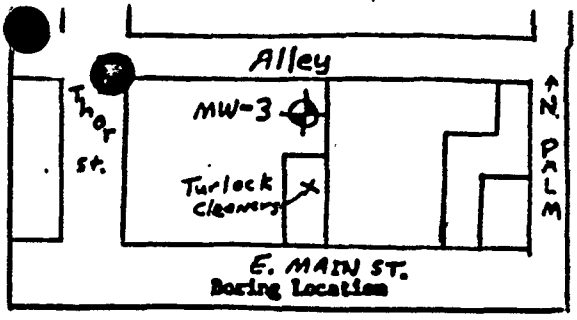


BORING NUMBER MW-3 DATE 7/12/90

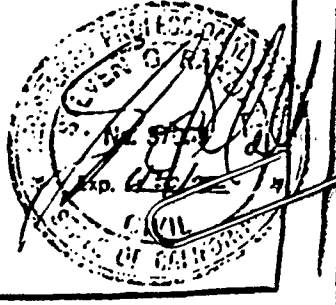
Project No. 200290 Project Name Turlock Cleaners

Total Depth 35.5' Dia. of Hole 8" Surface Elev. --- Water Level 18.5'

Drilling Co. Sierra Drilling Driller Dave Truskoff/Paul Pierson

Drilling Method Hollowstem Auger Geologist Lois Frantz

DEPTH	STRIKE	WELL CONSTR.		ODOR	U.S.C.	Description
	7				SW	Heaving Sands in spoons
17	10					
	12					Harder - Sand
18	13					GROUNDWATER AT 18.5 feet
19	26					
	48					
20	8					Heaving Sand - Stem Caught
21	7					
22						Unable to sink well casing - redrilling to resume on 7/13/90
23						
24						
25						
26						
27						
28						



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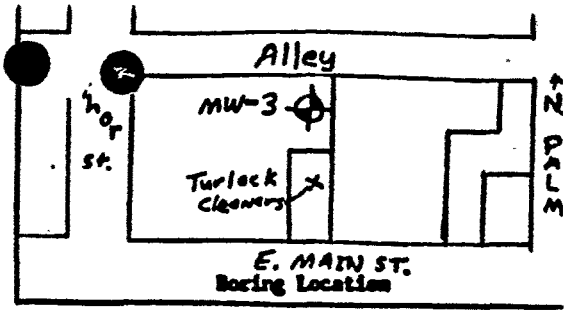


Boring Location

BORING NUMBER MW-3 DATE 7/12/90

Project No. 200290 Project Name Turlock Cleaners

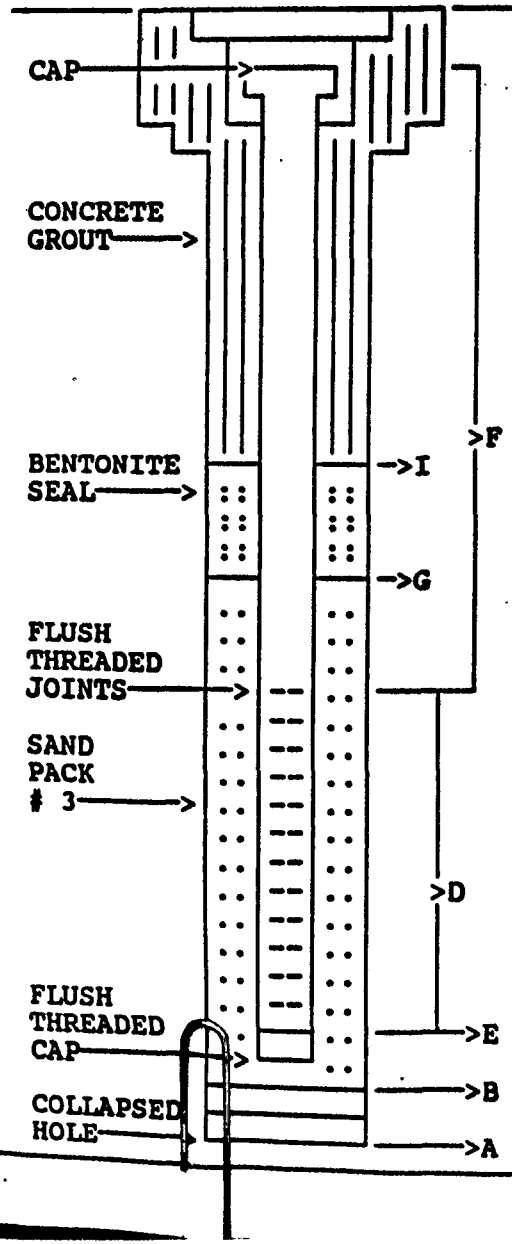
Total Depth 35.5' Dia. of Hole 8" Surface Elev. --- Water Level 18.5'

Drilling Co. Sierra Drilling Driller Dave Truskoff/Paul Pierson

Drilling Method Hollowstem Auger Geologist Lois Frantz

DEPTH	STRIKE	WELL CONSTR.	ODOR	U.S.C.	Description
29					
30					
31					
32					
33				MH	Clay
34					
35					

MONITORING WELL DIAGRAM



WELL NO. - 3 DATE CONSTRUCTED - 7-12-90

PROJECT NO. - 200290

	MEASUREMENTS
A. TOTAL DEPTH DRILLED	(A) 35.5'
B. DEPTH OF OPEN HOLE (SAME AS TOTAL DEPTH DRILLED IF NO CAVING OCCURS)	(B) 35.5'
C. FOOTAGE OF HOLE COLLAPSED	(C) 0'
D. LENGTH OF SLOTTED CASING INSTALLED	(D) 30'
E. DEPTH OF BOTTOM OF CASING	(E) 35.5'
F. LENGTH OF BLANK CASING	(F) 5.5'
G. DEPTH TO TOP OF SAND PACK	(G) 3'
H. FOOTAGE OF SAND PACK	(H) 32.5'
I. DEPTH TO TOP OF BENTONITE SEAL	(I) 2'
J. THICKNESS OF BENTONITE SEAL	(J) 1'
K. THICKNESS OF CONCRETE GROUT	(K) 2'

1. BORING DIAMETER	(1) 6 3/4"
2. CASING SIZE/SLOTTING	(2) 2" OD/0.020"
3. TYPE OF CASING	(3) Schedule 40 PVC
4. NUMBER OF BAGS OF SAND	(4) 7.5
5. ELEVATION	(5) -----
6. DEPTH TO FREE-PRODUCT	(6) -----
7. DEPTH TO GROUND WATER	(7) 16.4'
8. THICKNESS OF FREE PRODUCT	(8) -----
9. DATE OF MEASUREMENTS	(9) 12-18-90

FIGURE - 5

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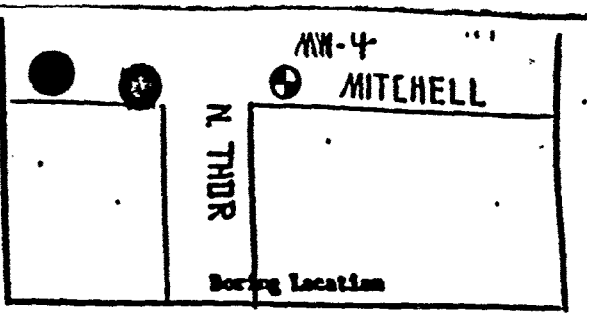

BORING NUMBER MW-4 DATE 7-10-90

Project No. 200290 Project Name TURLOCK DRY CLEANERS

Total Depth 34' Dia. of Hole 2" Surface Elev. _____ Water Level 18'

Drilling Co. SIERRA Driller DAVE TRUSKOFF

Drilling Method HOLLOW STEM AUGER Geologist LOIS FRANTZ

DEPTH	STROKES	WELL CONSTRUCTION		ODOR	U.S.C.	Description
5	16		STREET BOX Bentonite Plug to 3 ft Cement Slurry 3 to 0 feet	NO	SM	4.5' DRY GRAY/GREEN SILTY SAND
	22					SILTY SAND GRAY/GREEN SLIGHTLY PLASTIC
6	33					NO 6' SAMPLE HARD CLODS
	7				ML	
7	9					NO 7'
						NO 7.5'
8	13					NO 8'
	12					8.5' BROWN SILTY CLAY SLIGHTLY MOIST PLASTIC
9	15					9' SILT - SLIGHTLY PLASTIC -W/COARSE GRAVEL
	7					
10	7				CL	NO 10.5'
11	8					NO 11.5'
	16					
12	16				SM	12.5' VERY MOIST SILTY SAND
13	24					13' NO SAMPLE
	25					13.5' NO SAMPLE
14	14				CL	14.5' BROWN MOTTLED HARD DRY - SILTY CLAY SLIGHTLY PASTIC
15	24					15' LAB. SAMPLE
	7					15.5' MOIST SILTY CLAY - PLASTIC
16						16.5' BROWN MOTTLED HARD SILTY SAND PLASTIC
					SM	

ETS
ENVIRONMENTAL & ASSOCIATES

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SEE PAGE 1

Boring Location

BORING NUMBER BM-4 DATE 7-10-90

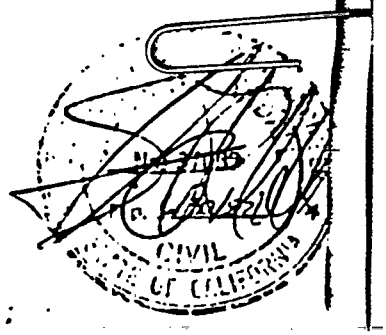
Project No. 200290 Project Name TURLOCK DRY CLEANERS

Total Depth 34' Dia. of Hole 2" Surface Elev. _____ Water Level 18'

Drilling Co. SIERRA Driller DAVE TRUSKOFF

Drilling Method HOLLOW STEM AUGER Geologist LOIS FRANTZ

DEPTH	STROKE	WELL CONSTR.		ODOR	U.S.C.	Description
	16					
17	12			NO	CL	CLAY
	24					
18					SW	GROUND WATER 18'
	19					WET SAND
19	17					
20	22					NO 20.5' sample
						Heaving sand
21						
22						
23						
24						
25						
26					CL	CLAY
27						
28						



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SEE PAGE 1

Boring Location

BORING NUMBER MW-4 DATE 7-10-90

Project No. 200290 Project Name TURLOCK DRY CLEANERS

Total Depth 34' Dia. of Hole 2" Surface Elev. _____ Water Level 34'

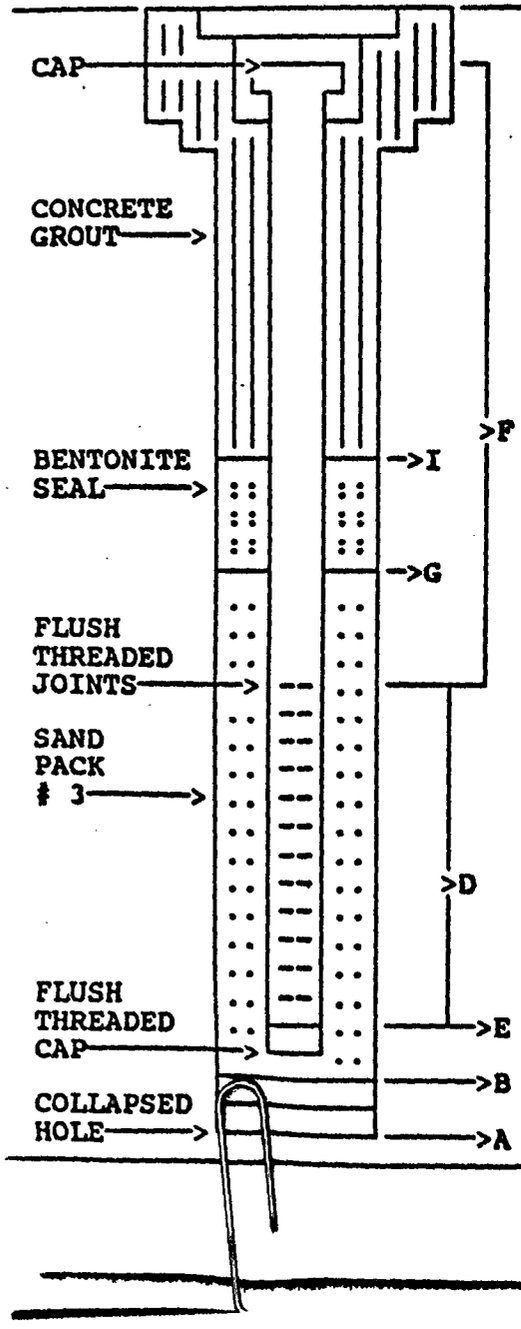
Drilling Co. SIERRA Driller DAVE TRUSKOFF

Drilling Method HOLLOW STEM AUGER Geologist LOIS FRANTZ

DEPTH	SAMPLES	WELL CONSTR.	ODOR	U.S.C.	Description
29				CL	
30					
31					
32					
33					
34		END CAP			TOTAL DEPTH 34'

P.O. BOX 9249

MONITORING WELL DIAGRAM



WELL NO. - 4 DATE CONSTRUCTED - 7-10-90

PROJECT NO. - 200290

	MEASUREMENTS
A. TOTAL DEPTH DRILLED	(A) 34.0'
B. DEPTH OF OPEN HOLE (SAME AS TOTAL DEPTH DRILLED IF NO CAVING OCCURS)	(B) 34.0'
C. FOOTAGE OF HOLE COLLAPSED	(C) 0'
D. LENGTH OF SLOTTED CASING INSTALLED	(D) 20'
E. DEPTH OF BOTTOM OF CASING	(E) 34.0'
F. LENGTH OF BLANK CASING	(F) 14'
G. DEPTH TO TOP OF SAND PACK	(G) 8'
H. FOOTAGE OF SAND PACK	(H) 26'
I. DEPTH TO TOP OF BENTONITE SEAL	(I) 3'
J. THICKNESS OF BENTONITE SEAL	(J) 5'
K. THICKNESS OF CONCRETE GROUT	(K) 3'

1. BORING DIAMETER	(1) 6 3/4"
2. CASING SIZE/SLOTTING	(2) 2" OD/0.020"
3. TYPE OF CASING	(3) Schedule 40 PVC
4. NUMBER OF BAGS OF SAND	(4) 7
5. ELEVATION	(5) -----
6. DEPTH TO FREE-PRODUCT	(6) -----
7. DEPTH TO GROUND WATER	(7) 15.3'
8. THICKNESS OF FREE PRODUCT	(8) -----
9. DATE OF MEASUREMENTS	(9) 12-18-90

FIGURE - 6

ETS
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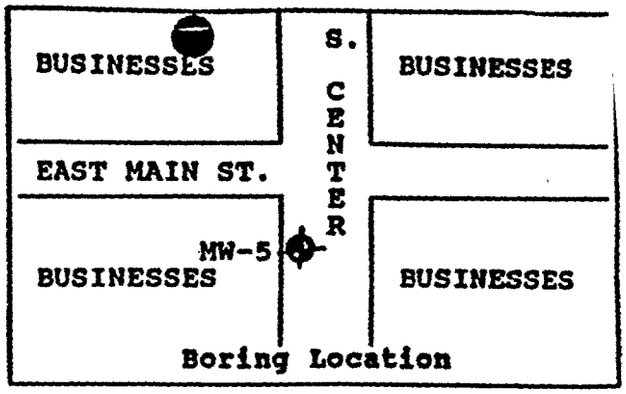
631 N. WALNUT ST., STE. 5 • TURLOCK, CA 95380 • (209) 667-6461
P.O. BOX 2242 • MERCED, CA 95340 • (209) 384-1041



Boring Location

BORING NUMBER MW-5 DATE 12-14-90

Project No. 200390 Project Name SNOW WHITE CLEANERS

Total Depth 30' Dia. of Hole 6.75" Surface Elev. --- Water Level 17.5'

Drilling Co. WEST HAZMAT Driller TONY & SCOTT

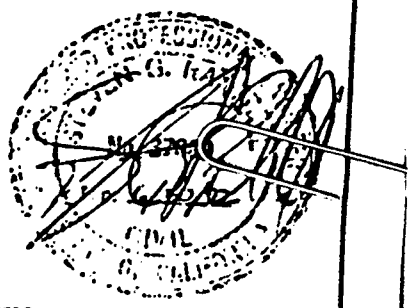
Drilling Method HOLLOW STEM AUGER Geologist BRETT WYCKOFF

Depth	Strike	Well Cnst	Odor	U.S.C	Description
					5" ASPHALT
1	HAND AUGER		NO	SW	SAND, WELL GRADED, LT. BROWN, SLIGHTLY MOIST, NOT PLASTIC. DRILL TO 5', THEN SAMPLE CONTINUOUSLY.
2	------				
3					
4					
5	50		NO		50 STRIKES = 7". SOIL TOO HARD. 5' LAB SAMPLE.
	--			SM	5.5' (PARTIAL SLEEVE) FINE SAND W\SOME SILT & SLIGHT LRG. GRAVEL. MED. BRN. MED. MOIST,
6	--				6' NO SAMPLE. NON PLASTIC.
7	9			SM	7' SILTY FINE SAND W\SLIGHT SMALL GRAVEL,
	14				OLIVE GREEN, SLIGHTLY MOIST. 7.5' SAME.
8	26				8' NO SAMPLE.

BORING NUMBER MW-5 DATE 12-14-90 ENVIRONMENTAL & ASSOC.

Project No. 200390 Project Name SNOW WHITE CLEANERS

Depth	Strike	Well Cnst	Odor	U.S.C	Description
9	7			SP	9' FINE TO MED. SAND, MED. BRN., SLIGHT TO MED. MOIST, NON PLASTIC.
	14				9.5' LAB SAMPLE.
10	14				10' SAME AS 9'.
11	14			SP	11' POORLY SORTED SAND, W\TRACE OF SILT, SOME GRAVEL, MED. BRN., MED. MOIST, NON PLASTIC.
	19				11.5' SAME.
12	17				12' SAME.
13	41		NO	ML	13' FINE SANDY SILT, MED. RD. BRN., SLIGHTLY MOIST, NON PLASTIC.
	38				13.5' SAME.
14	24				14' MED. SANDY SILT W\SOME GRAVEL, MED. RD. BRN., SLIGHT TO MED. MOIST, NON PLASTIC.
15	14			SW	15' MED. SAND, MED. BRN., MED. MOIST, NON PLASTIC.
	25				15.5' LAB SAMPLE.
16	27				16' SAME AS 15', BUT MOIST.
17	15			SP	17' FINE TO MED. SAND W\TRACE OF PEA GRAVEL, LT. MED. BRN., MOIST, NON PLASTIC.
	33			*	17.5' MED. TO COARSE SAND, MED. RED-BRN., WET, NON PLASTIC. * GROUND WATER.
18	46			SP	18' SAME, BUT OLIVE GRN.
19	5				19' SAME AS 18'.
	21				19.5' SAME.
20	50				20' SAME.
21	8				21' SAME, BUT MORE OLIVE BROWN.

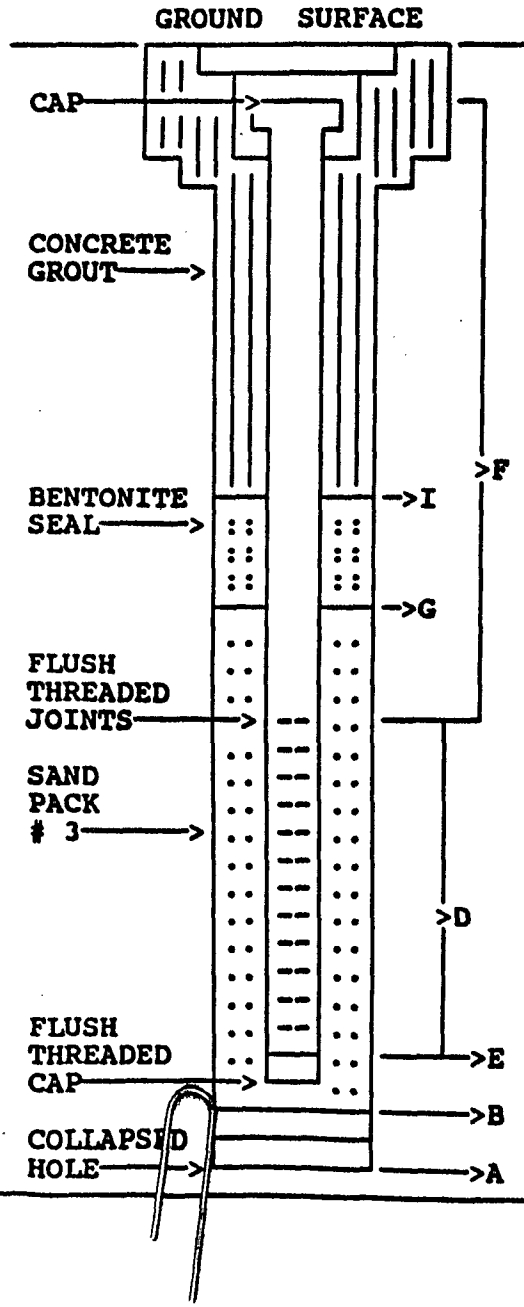


BORING NUMBER MW-5 DATE 12-14-90 ETS ENVIRONMENTAL & ASSOC.

Project No. 200390 Project Name SNOW WHITE CLEANERS

Depth	Strike	Well Cnst	Odor	U.S.C	Description
	13			CH	21.5' CLAY, OLIVE GREEN, MED. MOIST, PLASTIC.
22	23				22' SAME.
23	23				23' CLAYEY SILT W/SOME TRACE OF SAND, OLIVE GREEN, MOIST, SLIGHTLY PLASTIC.
	50				23.5' SAND, MED. BRN., WET, NON PLASTIC.
24	---				24' NO SAMPLE.
25	6		NO	SP	25' FINE TO MED. SAND, MED. OLIVE BRN., WET, NON PLASTIC.
	28				25.5' SAME.
26	40				26' SAME.
27	6			SM	27' SILTY SAND, 33% COARSE GRAINED, MED. BRN., WET, NON PLASTIC.
	50				27.5' SAME.
28	---				28' SAME.
29	38			ML	HEAVING SAND
	50				29' NO SAMPLE.
30	---				29.5' SANDY SILT W/SOME CLAY, OLIVE GREEN, MOIST, LOW TO MED. PLASTIC. 50 STRIKES = 4".
					30'---

MONITORING WELL DIAGRAM



WELL NO. - 5 DATE CONSTRUCTED - 12-14-90

PROJECT NO. - 200390

	MEASUREMENTS
A. TOTAL DEPTH DRILLED	(A) 30'
B. DEPTH OF OPEN HOLE (SAME AS TOTAL DEPTH DRILLED IF NO CAVING OCCURS)	(B) 30'
C. FOOTAGE OF HOLE COLLAPSED	(C) 0'
D. LENGTH OF SLOTTED CASING INSTALLED	(D) 20'
E. DEPTH OF BOTTOM OF CASING	(E) 30'
F. LENGTH OF BLANK CASING	(F) 10'
G. DEPTH TO TOP OF SAND PACK	(G) 8'
H. FOOTAGE OF SAND PACK	(H) 22'
I. DEPTH TO TOP OF BENTONITE SEAL	(I) 3'
J. THICKNESS OF BENTONITE SEAL	(J) 5'
K. THICKNESS OF CONCRETE GROUT	(K) 3'

1. BORING DIAMETER	(1) 6 3/4"
2. CASING SIZE/SLOTTING	(2) 2" OD/0.020"
3. TYPE OF CASING	(3) Schedule 40 PVC
4. NUMBER OF BAGS OF SAND	(4) 5
5. ELEVATION	(5) -----
6. DEPTH TO FREE-PRODUCT	(6) -----
7. DEPTH TO GROUND WATER	(7) 18'
8. THICKNESS OF FREE PRODUCT	(8) -----
9. DATE OF MEASUREMENTS	(9) 12-18-90

FIGURE - 7

REFERENCE 9

RESNA
Working to Restore Nature

1710 Main Street
Escalon, CA 95320
Phone: (209) 838-3507
FAX: (209) 838-3509

QUARTERLY MONITORING REPORT
ORDER NO. 91-815

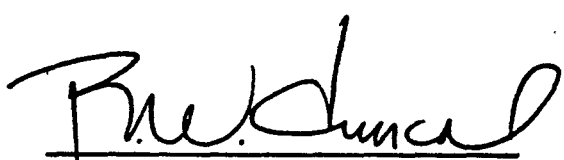
DURITE CLEANERS GROUNDWATER INVESTIGATION
TURLOCK, CA

prepared for:

Mr. Kevin Lally
Cox, Garrett, Nagle & Lally
Post Office Box 111
Martinez, CA 94553

for submittal to:

CA Regional Water Quality Control Board
Central Valley Region
3443 Routier Road
Sacramento, CA 95827-3098



Russell W. Juncal
CA Registered Geologist No. 3864

January 20, 1992

R-011392.RWJ

1.0 INTRODUCTION/PREVIOUS WORK

This report is being submitted in accordance with the monitoring and reporting program of the Central Valley Regional Board Order no. 91-815. The program encompasses 5 shallow groundwater wells installed as part of an investigation of chlorinated hydrocarbon contamination in the downtown Turlock area. These wells were installed in 1990 by ETS Environmental & Associates. Details of well design, construction and development are contained in their Site Assessment Report (ETS, 1991). The well locations are shown on Figure 1.

Since their initial installation each of the wells has been resampled for chlorinated organic compounds at least 3 times as discussed below in section 3.0. Additionally, several of the wells have been sampled for other organic constituents and certain inorganic species.

2.0 HYDROGEOLOGIC SETTING

The Turlock area is underlain by alluvial plain sediments shed from the Sierra Nevada Range. At least three hydrostratigraphic units occur in the Turlock area: 1) the unconfined zone, 2) the confined unconsolidated aquifer, and 3) the consolidated (Bedrock) aquifer (Page and Balding, 1973).

The unconfined zone occurs in unconsolidated deposits above and east of the E-clay, an already extensiol low permeability lacustrine unit. In the Turlock area, the base of the unconfined water body is the top of the Mehrten Formation. In places, near the eastern boundary of the E-clay, the base of the unconfined water body, in terms of use, is the base of fresh water.

The confined aquifer occurs in unconsolidated and semiconsolidated sediments that underlie the E-clay. The base of this unit is probably the base of fresh water in the area (Page and Balding, 1973). The head in the confined water body is typically less than that in the overlying unconfined zone due to groundwater pumping. Little water is extracted from above the E-Clay in the Turlock area.

Groundwater may exist under both confined and unconfined conditions within the consolidated formations such as the Valley Springs or the Mehrten Formations, however, these are not important aquifers in the Turlock area.

Before extensive pumping began in the San Joaquin Valley, groundwater in both the unconfined and confined zones generally moved westward and southwestward toward the valley trough. While pumping from the heavily developed confined zone in the area may have a significant local affect on gradients, the direction of flow within the unconfined zone in the Turlock area remains largely to the southwest based on determinations from 4 ongoing hydrologic assessments. These assessments include the subject study, as well as similar shallow groundwater investigations at the Old Carrs Cleaners, the Mobil station at the Corner of Golden State Blvd. and Main St., and the Chevron Station at Golden State and Olive St.

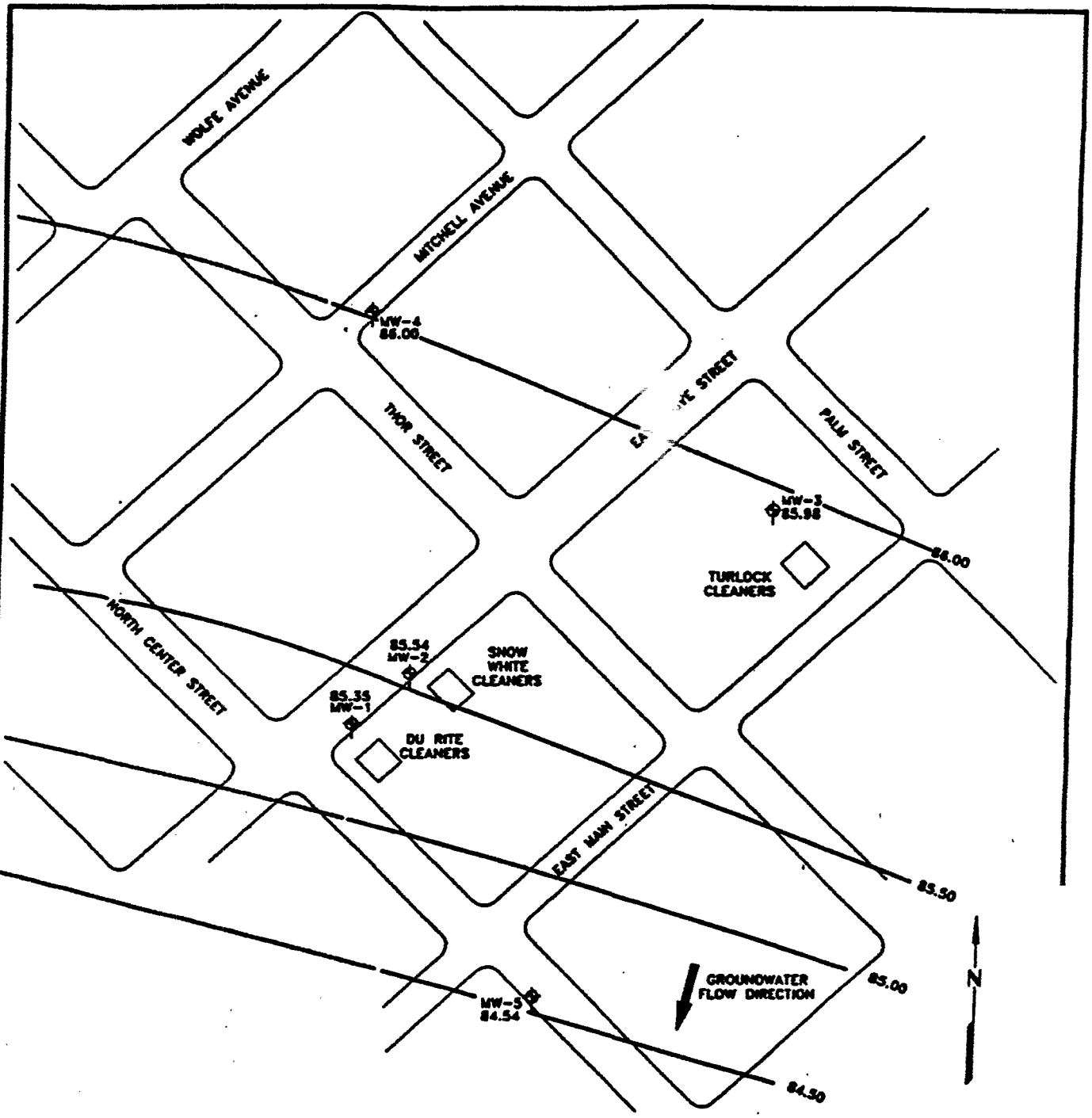
3.0 SITE ACTIVITIES DURING SUBJECT QUARTER

3.1 Monitoring Well Sampling

Well sampling was performed three times during the quarter. On October 3, wells MW1 and MW5 were purged and sampled for halogenated volatile organic compounds (HVOCs), total volatile petroleum hydrocarbons (TPHG) and benzene, toluene, ethylbenzene and xylenes (BTEX). On November 6, well MW1 was sampled for halogenated volatile organic compounds, and on December 16, all 5 wells were purged and sampled for HVOCs.

Prior to sampling with one-use disposable bailers, each well was purged using a suction lift pump fitted with disposable polyethylene tubing. The disposable tubing was changed between each well. Purged water was discharged directly into DOT approved drums which were placed along the back wall of the Durite Cleaners building. A field purge log for each well is contained in Appendix II.

Samples were transferred from the bailers with a bottom emptying device into unpreserved laboratory-provided 40-mil vials and transported under chain of custody protocol to Sequoia Analytical Laboratory for analysis. The analytical results for HVOCs are shown on Table 1



LEGEND:

MW-5 ◆ MONITORING WELL

85.54 GROUNDWATER ELEVATION (10/03/91 CONTOUR INTERVAL = 0.5 FT.)

SCALE IN FEET

0 145 290

FN: 4955

RESNA

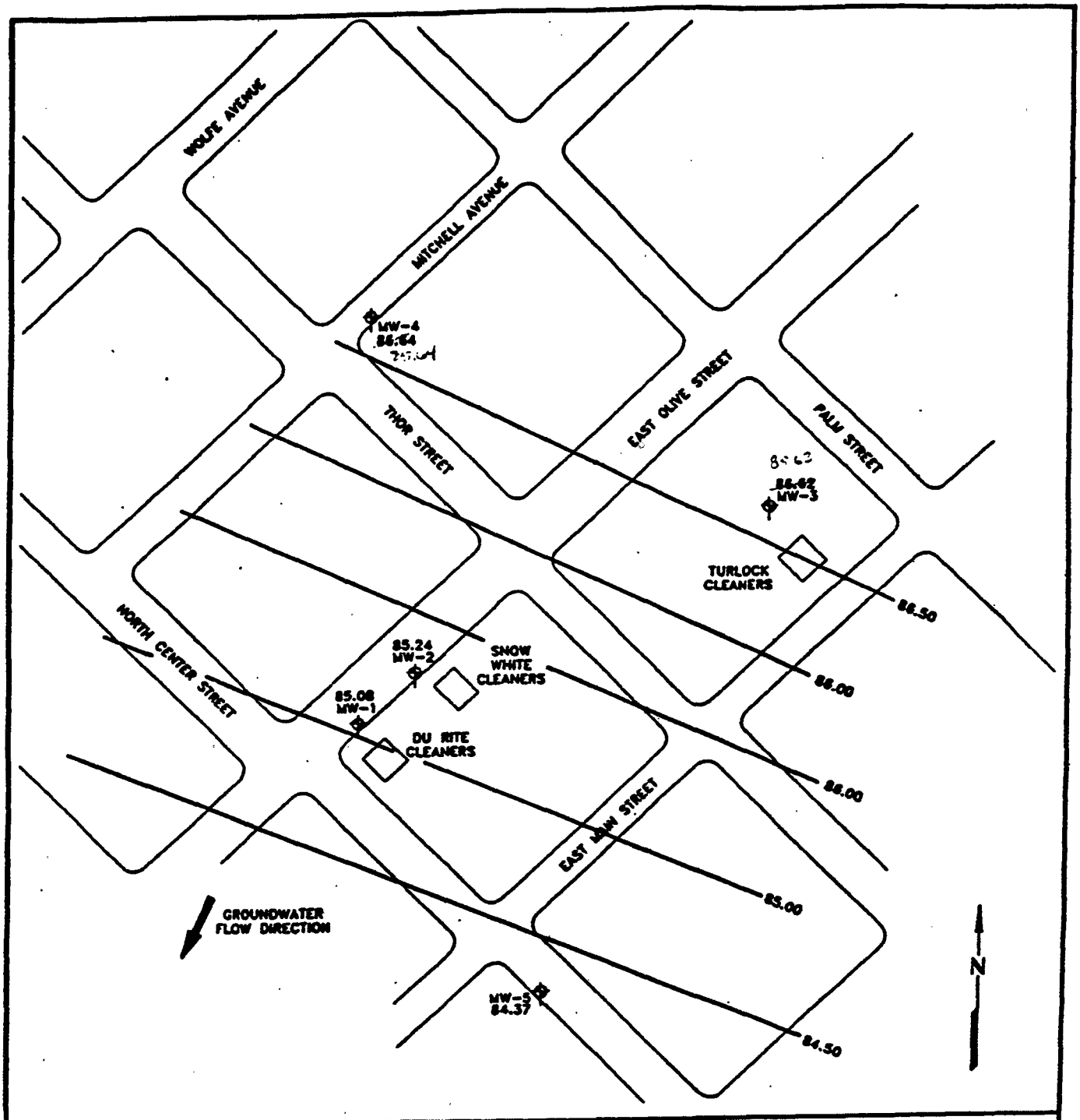
1710 MAIN STREET
ESCALON, CA. 95320

FIGURE 2 – GROUNDWATER ELEVATION (10/03/91)

DURITE CLEANERS

TURLOCK, CA

JOB NO. W0495



LEGEND:

MW-5 ⊕ MONITORING WELL

85.24 GROUNDWATER ELEVATION (12/06/91 CONTOUR INTERVAL = 0.5 FT.)

SCALE IN FEET

0 145 290

FN: 4955

RESNA

1710 MAIN STREET
ESCALON, CA. 95320

FIGURE 3 - GROUNDWATER ELEVATION (12/06/91)

DURITE CLEANERS

TURLOCK, CA.

JOB NO. WO495

TABLE 1
RESULTS OF MONITORING WELL SAMPLE ANALYSIS FOR HALOGENATED VOLATILE ORGANIC COMPOUNDS
DURITE CLEANERS
TURLOCK, CA

*(Results in µg/l)**

DATE	SAMPLE ID	SAMPLED BY	PCE**	TCE	TCA**	DCE**
12/16/91	MW1	RW	* 1400	* 50	<34	<34
	MW2	RW	* 37	<1.0	<1.0	<1.0
	MW3	RW	* 40	<10.0	<10.0	<10.0
	MW4	RW	<0.5	<0.5	<0.5	<0.5
	MW5	RW	~~15~~	<0.5	<0.5	<0.5
11/06/91	MW1	RW	~~140~~	~~12~~	<2.5	13
10/06/91	MW1	RB	~~354~~	TR	<10.0	<10.0
10/03/91	MW1	RW	~~23~~	<0.5	23	59
	MW5	RW	* 26	<0.5	<0.5	<0.5
09/24/91	MW2	JM	~~9.8~~	<0.5	<0.5	<0.5
	MW4	JM	<0.5	<0.5	<0.5	<0.5
05/16/91	MW1	JM	~~420~~	~~12~~	<10.0	<10.0
	MW2	JM	~~7~~	<0.5	<0.5	<0.5
	MW3	JM	~~22~~	<2.0	<2.0	<2.0
	MW4	JM	<0.5	<0.5	<0.5	<0.5
	MW5	JM	~~19~~	<0.5	<0.5	<0.5
07/31/90	MW1	ET	1100	62	ND	52
	MW2	ET	7.1	ND	ND	ND
	MW3	ET	22	ND	ND	ND
	MW4	ET	ND	ND	ND	ND
	MW5	ET	233	ND	ND	ND

NOTES:

*	=	µg/l = Micrograms per Liter
**	=	Total of Isomers
RW	=	RESNA Industries/WaterWork Corp.
RB	=	Regional Board Staff
JM	=	John Minney Consulting Engineer
ET	=	ETS Environmental
ND	=	Below Method Detection
TR	=	Trace

TABLE12.RW3

FACILITY NAME/ RCRA ID	CONTACT NAME / FACILITY ADDRESS	TELEPHONE	NOTIF DATE	CAL DIST/ COUNTY	FACILITY TYPE TSD	GEN	TRN	BBL	RCY
DU RITE CLEANERS CAD981993405	E. MANAGER 15839 E IMPERIAL HWY	(213)592-2891 LA MIRADA	11/02/92 CA 90638	3 LOS ANGELES	-	SQG	-	-	-
DU-RITE CLEANERS CAD981615024	E. MANAGER 141 NORTH CENTER	(209)634-6248 TURLOCK	11/25/86 CA 95380	1 STANISLAUS	-	SQG	-	-	-
DU-RITE METAL STAMPING CAD008373888	E. MANAGER 2233 TYLER AVE	(818)579-7320 SOUTH EL MONTE	04/07/86 CA 91733	3 LOS ANGELES	-	-	-	-	-
DUAL GRAPHICS INC CAD064465420	E. MANAGER 2997 E LAPALMA	(714)632-8540 ANAHEIM	12/13/85 CA 92806	4 ORANGE	-	SQG	-	-	-
DUAL-TEMP MFG, INC CAD981162514	E. MANAGER 13941-D NORTON AVE	(714)591-9106 CHINO	11/06/85 CA 91710	4 SAN BERNARDINO	-	LQG	-	-	-
DUANE MC PETERS AUTO BODY CAD981392236	E. MANAGER 626 TRUMAN ST	(818)361-4313 SAN FERNANDO	02/25/86 CA 91340	3 LOS ANGELES	-	SQG	-	-	-
DUANE ULRICH DBA DUANES EWP RTL CAD981983158	E. MANAGER 769 KEMP PL	(818)331-4742 COVINA	04/24/87 CA 91722	3 LOS ANGELES	-	-	TRN	-	-
DUANTLESS MOLDS INC CAD981396054	. 806 N. GRAND AVE	( ) - COVINA	04/14/86 CA 91724	3 LOS ANGELES	-	LQG	-	-	-
DUART INDUSTRIES LIMITED CAD982314981	E. MANAGER 55 GREEN ST SUITE 410	(415)860-0260 SAN FRANCISCO	10/28/87 CA 94111	2 SAN FRANCISCO	-	SQG	-	-	-
DUARTE HIGH SCHOOL CAD983648981	T. CLARK 1565 E CENTRAL	(818)358-1191 DUARTE	09/22/92 CA 91010	LOS ANGELES	-	SQG	-	-	-
DUARTE MITSUBISHI CAD983629320	R. SCHILDER 1125 CENTRAL	(818)301-8000 DUARTE	04/13/92 CA 91010	LOS ANGELES	-	SQG	-	-	-
DUARTE SERVICE MOBIL CAD983641002	?. GOVAGASSIAN 902 E HUNTINGTON DR	(818)357-2302 DUARTE	06/18/92 CA 91010	LOS ANGELES	-	SQG	-	-	-
DUARTE TRUCKING CAD982445231	E. MANAGER 5110 CABRILLO PT	(916)777-6434 BYRON	09/16/91 CA 94514	1 CONTRA COSTA	-	-	TRN	-	-
DUARTE WITTENG INC CAD982472599	E. MANAGER 825 FERRY STREET	(415)228-0750 MARTINEZ	06/02/88 CA 94553	2 CONTRA COSTA	-	SQG	-	-	-
DUBLIN AUTO CAD982500365	E. MANAGER 6429 GOLDEN GATE DR	(415)828-0243 DUBLIN	03/06/90 CA 94568	2 ALAMEDA	-	SQG	-	-	-
DUBLIN HONDA CAD981658990	E. MANAGER 7099 AMADOR PLAZA RD	(415)828-4600 DUBLIN	11/10/86 CA 94568	2 ALAMEDA	-	LQG	-	-	-

REFERENCE 10

REFERENCE 11

MEMORANDUM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD • CENTRAL VALLEY REGION

3443 Routier Road
Sacramento, CA 95827-3098

Phone: (916) 361-5600
ATSS: 8-495-5600

TO: WIP Program Files
Turlock Investigation

FROM: Sara E. Denzler
Land & Water Use Analyst

DATE: 1 June 1989

SIGNATURE: Sara E. Denzler

SUBJECT: SOIL-GAS SAMPLING RESULTS - TURLOCK, CA

As part of an ongoing AB1803 follow-up investigation of the presence of tetrachloroethylene (PCE) in two small system wells at Tri Valley Growers Plant 6, Regional Board staff conducted passive soil-gas sampling throughout downtown Turlock.

The survey consisted of placing pyrex tubes containing carbon coated wire, open end down, 10 - 12 inches below the soil surface with a cover of soil. After approximately seven weeks, the tubes were removed and sent to Petrex Labs for Volatile Organic Chemical (VOC) analysis by Curie point desorption mass spectrometry (MS). MS output is in terms of ion counts of particular ion mass/charge ratios, which are then converted to ion counts of a particular VOC compound. The ion counts are not absolute concentrations of the particular VOCs detected. They represented a time-weighted flux of the particular VOCs in soil gas and are proportional to the concentration of the VOCs in soil moisture and, in some cases, shallow ground water.

Forty four samples (and three duplicates) were analyzed by PETREX for VOCs. The results of the survey indicate the presence of PCE, dichloropropane, carbontetrachloride, dichlorobenzene (DCB) and hydrocarbons in soil gas under the area. According to PETREX, the apparent correlation of the dichloropropane fragment and carbon tetrachloride with the PCE suggests that they may be contaminants in the PCE.

Samples 34, 37, 38, 39, 41 and 43 have the highest PCE count and are all located in close proximity to current or past drycleaning facilities. The data indicates "hotspots" at DuRite Cleaners, Snow White Cleaners, Turlock Cleaners and the old site of Carr's Cleaners. The new Carr's Cleaners site does not appear to be a source, but may be located at the edge of a soil-gas plume which appears to originate at Turlock Cleaners. Another plume appears to be present downgradient from DuRite and Snow White Cleaners.

Sample 2, upgradient from DuRite and Snow White Cleaners, also had a high ion count for PCE. This may be due to its close proximity to the two cleaners (one block away). However, to determine whether there is an upgradient source, staff placed six additional tubes upgradient and at the site of the cleaners. Results from these tubes are expected in July.

To gain additional information regarding the "hotspot" at the old location of Carr's Cleaners, staff also placed nine additional PETREX tubes in the area surrounding the site. Data from these tubes are also expected in July.

Staff intends to conduct ambient and flush sampling of sewers near all of the suspected drycleaners to determine levels of PCE in wastewater and sewer lines.

INSPECTION REPORT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - CENTRAL VALLEY REGION

WDS NUMBER: 5C502006N01

Form Printed -> 10/04/89

DISCHARGER:

TRI VALLEY GROWERS
P.O. DRAWER 1211
MODESTO ,CA 95353

CONTACT: BRUCE RANKIN
PHONE: 2095264100

FACILITY NAME:

TRI VALLEY GROWERS PLANT #6
495 S. GOLDEN STATE BLVD
TURLOCK ,CA

CONTACT: BRUCE RANKIN
PHONE:

STAFF: PAL

ORDERS:

ORDER NUMBER	DATE ADOPTED	TYPE

LAST INSPECTIONS:

DATE	TYPE	VIOLATION?
890511	06	N
890623	06	N
890818	06	N
890920	06	N
890922	06	N

INSPECTION TYPE:

[ ] 1. "A" TYPE COMPLIANCE (SAMPLING)
[ ] 2. "B" TYPE COMPLIANCE (NO SAMPLING)
[ ] 3. NON-COMPLIANCE FOLLOW-UP
[ ] 4. ENFORCEMENT FOLLOW-UP
[ ] 5. COMPLAINT
[ ] 6. PRE-REQUIREMENT
[X] 7. MISCELLANEOUS

PROGRAM COMPONENT TASK NUMBER: 12/1/1

INSPECTION DATE: 8 9 1 0 1 0 3 1 (Y Y M M D D)

INSPECTOR'S INITIALS: P A L

CONTACT: _____

INSPECTION SUMMARY (100 character limit): Removed soil gas tubes in Turlock.

ADDITIONAL COMMENTS: _____

WDR REVIEW: _____ MONITORING PROGRAM REVIEW: _____

Was there a VIOLATION discovered during this inspection? YES [ ] NO [ ] PENDING SAMPLE RESULTS [ ] NOT APPLICABLE [X]

(If yes, you MUST attach a completed violation input form.)

INSPECTOR SIGNATURE & DATE: Polly Lowry 10/5/89

Reviewed By:

_____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - CENTRAL VALLEY REGION

INSPECTION REPORT

WDS NUMBER: 5C502004N01 STAFF: SED

DISCHARGER:

TRI VALLEY GROWERS
P.O. DRAWER 1211
MODESTO ,CA 95353

CONTACT: BRUCE RANKIN
PHONE: 2095264100

FACILITY NAME:

TRI VALLEY GROWERS PLANT #6
495 S. GOLDEN STATE BLVD
TURLOCK ,CA

CONTACT: BRUCE RANKIN
PHONE:

ORDERS:
ORDER NUMBER DATE ADOPTED TYPE

LAST INSPECTIONS:
DATE TYPE VIOLATION?

INSPECTION TYPE:

[ ] 1. "A" TYPE COMPLIANCE (SAMPLING)
[ ] 2. "B" TYPE COMPLIANCE (NO SAMPLING)
[ ] 3. NON-COMPLIANCE FOLLOW-UP
[ ] 4. ENFORCEMENT FOLLOW-UP
[ ] 5. COMPLAINT
[ ] 6. PRE-REQUIREMENT
[X] 7. MISCELLANEOUS

PROGRAM COMPONENT
TASK NUMBER:
1/2161

INSPECTION DATE: 8 9 0 6 1 1 1 1
Y Y M M D D

INSPECTOR'S INITIALS SIED

CONTACT: _____

INSPECTION SUMMARY (100 character limit): Conducted additional PETREX sampling as part of ~~investigation~~ WIP investigation in Turlock

ADDITIONAL COMMENTS: _____

WDR REVIEW: _____ MONITORING PROGRAM REVIEW: _____

Was there a VIOLATION discovered during this inspection? YES [ ] NO [ ] PENDING SAMPLE RESULTS [ ] NOT APPLICABLE [X]

(If yes, you MUST attach a completed violation input form.)

Viewed By:

INSPECTOR SIGNATURE & DATE: Sara E. Davies

JUN 06 1989

DATA ENTRY DATE

REFERENCE 12

STATE OF CALIFORNIA

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION
3443 ROUTIER ROAD, SUITE A
SACRAMENTO, CA 95827-3098
PHONE: (916) 361-5600
FAX: (916) 361-5686

26 September 1991

Mr. Cliff Martin, Utilities Director
City of Turlock
901 South Walnut
Turlock, CA 95380

FILE

RESULTS OF AUGUST 1991 SEWER SAMPLING IN TURLOCK, STANISLAUS COUNTY

On 21 August 1991 I met with Chester Latif of your staff to sample the sewer lines on East Olive Street and Crane Avenue. The results are enclosed. Although each sample was analyzed by both EPA Methods 601 and 602, I have tabulated only the results for Method 601.

As the enclosed memo discusses, no PCE was shown to be coming into the main sewer line along East Olive Street from the residential areas. PCE was detected in a flush sample from the tributary line serving the block on which Northern Tire and Wheel is located. In addition to Northern Tire and Wheel, Board staff will investigate past facilities on this block as potential sources of PCE in the sewer.

The sample taken near Center Car Wash had no detectable PCE. However, another sample should be taken when there is not so much water in the sewer. A flush sample also should be taken at that time. If the City cannot sample this location please contact me within the next month so I can arrange to meet with your staff to do this sampling.

To keep our files up to date on the ground water investigation in Turlock, please send me the results of the City's sewer sampling conducted on 1 August 1991 and, for Turlock Municipal Well No. 5, all analytical results since April 1991 and well production data since July 1991. In addition, we have received the video tape of the City's televising of the sewer line between manholes F8S18 and F8S20 on 15 April 1991. We also would like to review the City's earlier video tape of the sewer lines that was done in late 1989 or early 1990 near Du Rite Cleaners, Snow White Cleaners and Turlock Cleaners. Please send me a copy of that tape and any subsequent tapes.

In addition to the video tapes, please provide information on the sewer pipes in the area, including the pipe material and any ASTM testing done on them, the age of the pipes, the allowable leakage through the pipes according to the manufacturer's specifications, and the type and age of joint gasket used.

You have mentioned that sampling ports have been installed at the sewer laterals of each of the cleaners. If the City has sampled the ports already, please send me copies of the analytical results when they are available. I

would like to sample the ports at Du Rite Cleaners, Snow White Cleaners, Turlock Cleaners, Bright Cleaners, and Carr's Cleaners. Please let me know if I will need the City's assistance to sample the ports.

Please respond to the items requested in this letter by 17 October 1991. If possible, I would like to sample the sewer near Center Car Wash and the sampling ports near the five cleaners sometime during the first week or two of October. I will call you to set up an appointment.

Thank you for your assistance in the Board's investigation of ground water contamination in Turlock. If you have any questions please call me at (916) 361-5649.

POLLY LOWRY
Associate Engineering Geologist

PAL:mdm

Enclosures

cc: See Attached List

MEMORANDUM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - CENTRAL VALLEY REGION

3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Phone: (916) 361-5600
ATSS Phone: 8-495-5600

TO: Wendy Cohen WRC
Senior Engineer

FROM: Polly Lowry
Associate Engineering Geologist

DATE: 26 September 1991

SIGNATURE: Polly Lowry

SUBJECT: *RESULTS OF AUGUST 1991 SEWER SAMPLING IN TURLOCK, STANISLAUS COUNTY*

As part of the Board's investigation of PCE contamination in Turlock's ground water, I sampled the sewer lines in downtown Turlock on 21 August 1991. Chester Latif from the City and two other City employees operating the Vactor Truck, assisted me in collecting ambient and flush samples from the sewer lines along East Olive Street and Crane Avenue.

The purpose of the sampling was to determine if there is any PCE coming from the sewer lines tributary to the ten inch main sewer lines. Along East Olive Street, the tributary lines serve predominantly residential areas. Along Crane Avenue, the tributary lines serve predominantly small businesses, auto dealerships, and auto repair shops. In addition, I took one sample downstream of Center Car Wash to determine if this facility is discharging any PCE into the sewer.

The samples were analyzed by EPA Methods 601 and 602. The results of the 601 analyses are tabulated on the attached sheet, and the sample locations are shown on the attached map. The results show that the lines tributary to the main sewer line along East Olive Street are not contributing PCE to the main sewer line, except for the tributary line which serves Turlock Cleaners and some other small businesses. The PCE in this tributary line is likely from Turlock Cleaners since no other sources of PCE have been found in this area.

Due to interference from oil, grease, or soap in samples taken along the Crane Avenue main sewer line and its tributary lines, the detection limit was as high as 20 µg/l in many of these samples.

PCE was detected in one flush sample (TS-40) and two ambient samples (TS-35 and TS-38) taken from lines tributary to the main sewer line along Crane Avenue. The flush sample TS-40 had 5.9 µg/l PCE. Since the ambient sample had less than 1.0 µg/l PCE this indicates an accumulation of PCE in the tributary line. Possible sources of this PCE are the Northern Tire and Wheel at 402 E. Main Street since approximately 1986, Gaddy's Shell Service Station at 412 East Main Street from approximately 1962 to 1970, and Roy Gullo Auto Sales at 416 East Main Street from approximately 1962 to 1982.

Northern Tire and Wheel has operated at 402 E. Main Street since about 1986. Approximately five gallons of CRC Brakleen (25% PCE and 75% 1,1,1-TCA) are used each month. The product is sprayed onto the parts and wiped off with a rag. Dirty rags are picked up by an industrial laundry service. Prior to Northern Tire and Wheel, Montgomery Ward was located at 402 E. Main Street.

The ambient sample TS-38 had 8.6 µg/l PCE. This is likely due to the PCE which has been detected in the sump at Carr's Cleaners at 500 East Main Street. Wastewater from this sump discharges to the sewer. Curry's Service Station, which operated at

502 East Main Street from approximately 1962 to 1973, may be another possible source of PCE in this tributary line.

TS-35, an ambient sample taken downstream of TS-38 and TS-40, had 21 µg/l PCE. This is likely due to the accumulated effects of the two tributary lines upstream of TS-35, whose PCE levels are represented by samples TS-38 and TS-40.

TS-43, an ambient sample taken downstream of Center Car Wash, showed no detectable levels of PCE. However, because the sewer was flooded with water at the time of sampling, I could not take a flush sample. I will resample this sewer when there is not so much water in the line, and inspect the facility.

CONCLUSIONS AND RECOMMENDATIONS

The August 1991 sewer sampling in Turlock showed that the PCE in the 10-inch main sewer line along East Olive Street is not coming from the residential areas. However, some PCE is coming from the six inch tributary line which serves Turlock Cleaners.

A flush sample from the tributary line which serves the block on which Northern Tire and Wheel is located has shown the accumulation of PCE in this tributary line. Further investigation into the past businesses Gaddy's Shell Service Station, Roy Gullo Auto Sales, and Montgomery Wards should be conducted to determine if these facilities may be a source of PCE in this tributary line.

Ambient samples downstream of the block on which Carr's Cleaners is located has shown PCE to be present in the tributary line serving Carr's Cleaners and other small businesses. Since previous investigations have shown PCE to be present in a sump at Carr's Cleaners, Carr's is the likely source of PCE in this tributary line. However, further investigation into Curry's Service Station should be conducted.

Although the sample taken downstream of Center Car Wash did not show any detectable PCE, another sewer sample should be taken when there is not so much water in the line. In addition, the facility should be inspected.

No conclusions can be drawn regarding the samples taken along Crane Avenue due to the high detection limit (20 µg/l) which resulted from interference from oil, grease, and soap in the samples.

AUG 1991 REGIONAL BOARD TURLOCK SEWER SAMPLE RESULTS

All units in µg/l

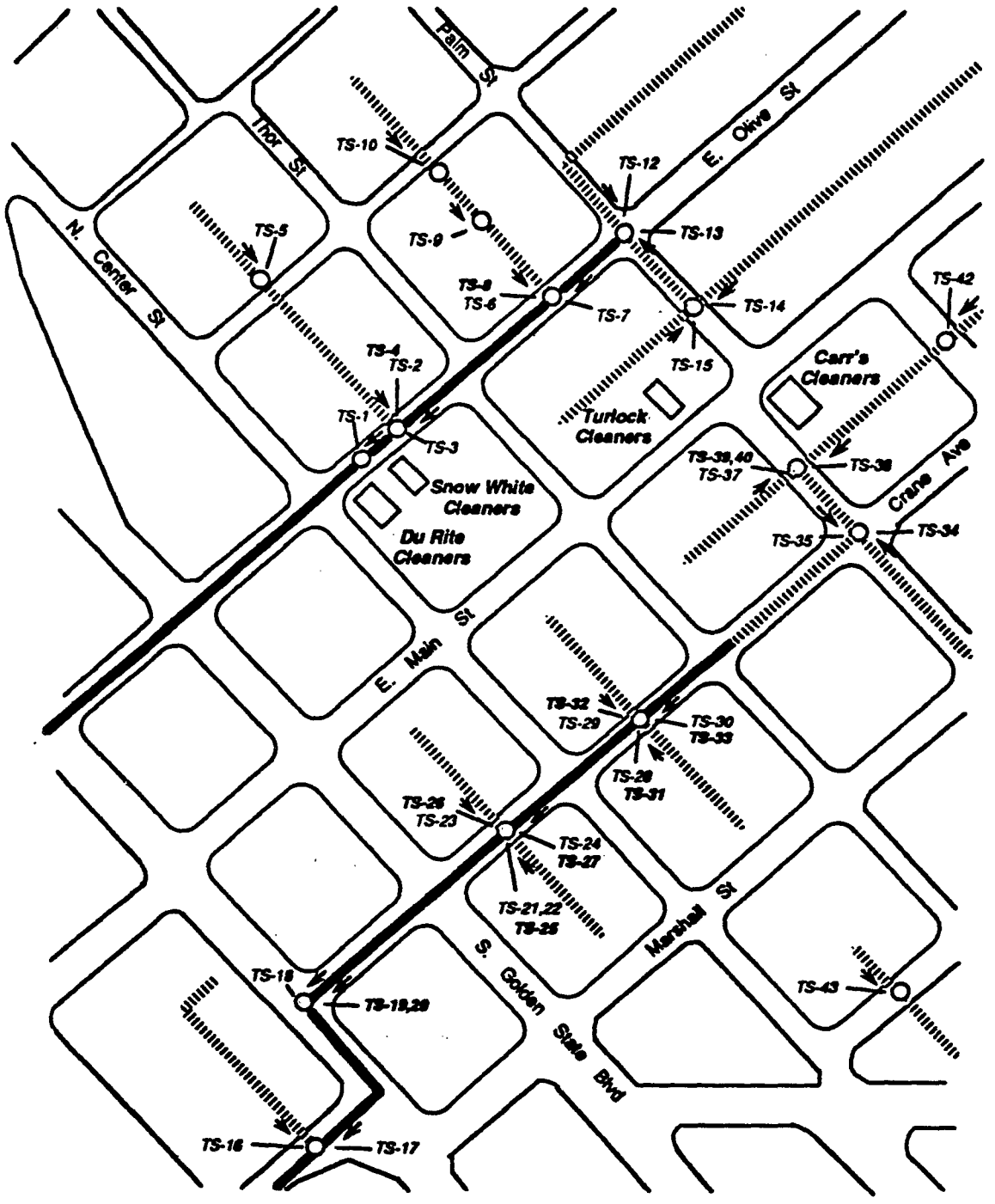
SAMPLE ID	PCE	TCE	cis-1,2-DCE	1,1,1-TCA	Chloro-form	Chloro-benzene	1,4-Dichloro-benzene	2-chloro-toluene
DN GRAD of S.W. → TS-1	24	<5.0	11	<5.0	<5.0	<5.0	<5.0	<5.0
TS-2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
UP GRAD of S.W. → TS-3	18	<5.0	<5.0	<5.0	75	<5.0	<5.0	<5.0
flush UP GRAD of SW → TS-4*	<5.0	<5.0	<5.0	<5.0	<5.0	13	216	<5.0
TS-5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-7	30	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-8*	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-9	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-11**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-12	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-13	16	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-14	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-15	80	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-16	<20	<20	<20	<20	<20	<20	<20	<20
TS-17	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	49	47
TS-18	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	34	13
TS-19*	<20	<20	<20	<20	<20	<20	84	<20
TS-20†	<20	<20	<20	<20	<20	<20	32	<20
TS-21	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.3	11
TS-22†	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	11
TS-23	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	151	<5.0
TS-24	<20	<20	<20	31	<20	<20	83	142
TS-25*	<20	<20	<20	<20	<20	<20	34	68
TS-26*	<20	<20	<20	<20	<20	<20	<20	<20
TS-27*	<20	<20	<20	<20	<20	<20	<20	<20
TS-28	<20	<20	<20	<20	<20	<20	<20	<20
TS-29	<20	<20	<20	<20	<20	<20	<20	<20
TS-30	<20	<20	<20	<20	<20	<20	19	<20

AUG 1991 REGIONAL BOARD TURLOCK SEWER SAMPLE RESULTS

SAMPLE ID	PCE	TCE	cis-1,2-DCE	1,1,1-TCA	Chloro-form	Chloro-benzene	1,4-Dichloro-benzene	2-chloro-toluene
TS-31*	<20	<20	<20	<20	<20	<20	<20	269
TS-32*	<20	<20	<20	<20	<20	<20	<20	45
TS-33*	<20	<20	<20	<20	<20	<20	21	<20
TS-34	<20	<20	<20	<20	<20	<20	53	<20
TS-35	21	<20	<20	<20	19	<20	5.8	<20
TS-36**	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
TS-37	<1.0	<1.0	<1.0	<1.0	9.8	<1.0	<1.0	<1.0
TS-38	8.6	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-39*	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
TS-40†	5.9	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
TS-41***	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TS-42	<20	<20	<20	<20	<20	<20	<20	<20
TS-43	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TS-44††	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

*Flush sample
**Rinse water
***Vactor Truck Water
†Duplicate of preceding sample
††Travel Blank

AUGUST 1991 REGIONAL BOARD SEWER SAMPLING



6 - 8 inch sewer line, tributary to main line

10 inch main sewer line

TS-18 Sewer sample point with sample number (flush samples in **bold**) ; arrow nearest sample number indicates direction of flow to that sample point

MEMORANDUM

REFERENCE 13

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - CENTRAL VALLEY REGION

3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Phone: (916) 361-5600
ATSS Phone: 8-495-5600

TO: Wendy L. Cohen
Senior Engineer

FROM: Polly Lowry
Associate Engineering Geologist

DATE: 20 November 1991

SIGNATURE: Polly Lowry

SUBJECT: *NOVEMBER 1991 SEWER LATERAL SAMPLE RESULTS IN TURLOCK, STANISLAUS COUNTY*

On 6 November 1991 I met with Stewart Vaughn, an industrial waste inspector for the City of Turlock, and Sachiko Itagaki a consultant for Kennedy/Jenks Consultants for the City of Turlock, to resample the sewer laterals at five of the six dry cleaning or laundry facilities which were sampled on 7 October 1991. I had been told by Cliff Martin on 22 October that the City flushed the sewer laterals after 7 October and resampled the laterals to determine if the PCE detected earlier was residual from past discharges. At the time of the 6 November 1991 sampling, however, Mr. Vaughn informed me that the City did not flush the laterals and does not plan to do so. He also told me that the samples he collected on 7 October at the time I collected my samples were not submitted to the lab for analysis because he had accidentally spilled his travel blanks. Mr. Vaughn said he returned later in the day on 7 October and resampled the laterals. The City's results discussed in my 25 October 1991 memo are actually from that later sampling, which could explain in part the divergent results.

On 6 November, both Mr. Vaughn and I collected a sample from each of four cleaners' laterals. Because there was no flow coming from Turlock Cleaners it was not possible to sample that lateral. I also collected a sample of supply water from a faucet on the outside of Snow White Cleaners' building, a sample of ground water from MW-1 (the monitoring well in front of Du Rite Cleaners), and two samples from Carr's Cleaners' lateral. I collected the first sample from Carr's lateral without using vinyl sampling gloves, and the second sample with vinyl sampling gloves.

All samples were placed in 40 ml glass VOA bottles such that no air bubbles were formed. The bottles were labeled with sample date and sample identification number and immediately placed on ice for preservation. The samples were submitted to the Regional Board laboratory on the same day they were collected. The laboratory analyzed the samples by EPA Method 601 and 602 within the 14 day holding time.

The results are tabulated on the attached sheet. PCE was detected in the sewer lateral of each facility except at Mission Uniform and Laundry Service (Mission) and Bright Cleaners (Bright). Due to interference from gasoline at Mission and perhaps soap at Bright, the detection limit for PCE in each of these two samples was high. The highest level of PCE was detected coming from Carr's Cleaners' lateral. At 1,008 μg/l, this is the highest level of PCE detected being dicharged from any of the laterals so far. Discharges of PCE from the sewer lateral at Du Rite Cleaners and Snow White Cleaners have decreased since the 7 October 1991 sampling.

The sample of supply water taken from the faucet outside of Snow White Cleaners building had no detectable level of PCE. The sample of ground water from MW-1 at Du Rite Cleaners had 354 μg/l PCE, in contrast to the reported <0.5 μg/l from a 11 October 1991 sampling by the consultant for Du Rite Cleaners.

The City's results of the 6 November 1991 sampling are not yet available.

TURLOCK 6 NOVEMBER 1991 SEWER LATERAL ANALYSES

SAMPLE NUMBER	SAMPLE LOCATION	PCE	TCE	Chloroform
1	Du Rite Cleaners' Sewer Lateral	11	<2.5	<2.5
2	MW-1 at Du Rite Cleaners	354	<10	<10
3	Snow White Cleaners' Sewer Lateral	2	<0.5	<0.5
4	Supply Water at Snow White Cleaners	<0.5	<0.5	<0.5
5	Carr's Cleaners' Sewer Lateral *	781	<20	<20
6	Carr's Cleaners' Sewer Lateral**	1008	<20	<20
7	Mission Uniform and Linen Service	<20	<20	<20
8	Mission Uniform and Linen Service***	<250	<250	<250
9	Bright Cleaners' Sewer Lateral	<10	<10	<10
10	Travel Blank	<0.5	<0.5	<0.5

*Sample taken without gloves

**Sample taken with gloves

***Duplicate of sample # 7

MEMORANDUM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD • CENTRAL VALLEY REGION
3443 Routier Road, Suite A
Sacramento, California 95827-3098
Phone: (916) 361-5600
ATSS: 8-495-5600

TO: All Interested Parties on Attached List

FROM: Wendy L. Cohen
Senior Engineer

DATE: 16 September 1991

SIGNATURE: Wendy L. Cohen

SUBJECT: SUMMARY OF 6 SEPTEMBER 1991 CLEANUP AND ABATEMENT HEARING, TURLOCK DRY CLEANERS, ET AL, STANISLAUS COUNTY

On 6 September 1991, the Board held a public hearing to consider a proposed cleanup and abatement order against the current and former owners and operators of three dry cleaners in Turlock (Snow White Cleaners, Du Rite Cleaners, and Turlock Cleaners), the City of Turlock, and three manufacturers of dry cleaning equipment used in the cleaners (Hoyt Manufacturing Corp., Detrex Corp., and VIC Manufacturing Company). Soil and ground water contamination has been found in the vicinity of the three cleaners, and the proposed order would require the parties to investigate and clean up the contamination.

Before Board Chair John Corkins opened the hearing, two attorneys requested that the item be held over until the next meeting. Dominic Holzhaus, attorney for three trade associations, asked for the delay to allow the parties to meet and come up with alternatives to present to the Board. He gave the Board a letter signed by five of the 13 parties expressing a willingness to meet and stated he thought he could get others to sign if he had more time. Kevin Lally, attorney for Du Rite Cleaners, requested the delay to examine recent soil gas and sewer sample results. After discussion by the Board, the hearing proceeded.

Three Board staff members presented the staff report. Attorneys for the dischargers then cross-examined, after which the dischargers testified. All but two of the dischargers had testified when time ran out, and the hearing was continued to the next Board meeting (1 November 1991) or some later date. The date of the continued hearing has not been set, but a notice will be mailed to all interested parties.

Staff had several handouts at the meeting including a revised soil gas plume map based on recent soil gas results. The original map (Attachment 1) was based on two soil gas surveys conducted in 1989. The map in the staff report (Attachment 2) regrettably contained an error; it should have been identical to the original one. The revised map (Attachment 3) is a refinement of the original based on a focused survey conducted in the summer of 1991 in the downtown area and around the old Carr's Cleaners on West Main Street.

A-F

California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Sacramento CA 95827-3098

CONTINUED PUBLIC HEARING

MARSHALL SWINNEY, ROY GULLO, ED RAMEY, BILL JACOBSON, CHARLOTTE JACOBSON,
JITU KAPADIA, ARLIS AND SYLVIA TEEKEL, JOHN KING,
THE TRUST OF ELBY TEEKEL (GORDON TEEKEL AND GAYLE PETERSON, TRUSTEES)
THE CITY OF TURLOCK, HOYT MANUFACTURING CORPORATION,
DETREX CORPORATION, AND VIC MANUFACTURING COMPANY
DU RITE CLEANERS, SNOW WHITE CLEANERS, AND TURLOCK CLEANERS
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, will continue a public hearing:

DATE: 22 November 1991

TIME: 9:00 a.m.

PLACE: State Capitol, Room 4202
(11th between L & N Streets)

to consider adopting a Cleanup and Abatement Order, pursuant to Section 13304 of the Water Code, requiring current and former owners and operators of Turlock Cleaners, Du Rite Cleaners, and Snow White Cleaners, the City of Turlock, and the dry cleaning equipment manufacturers to clean up discharges that have polluted waters of the State and abate their effects. The Board held a public hearing on the matter on 6 September 1991 and continued the hearing. At this hearing, staff will recommend that the Board delete several parties from the proposed Order, including Hoyt Manufacturing Corporation, Detrex Corporation, VIC Manufacturing Company, and John King.

The Board's staff, the dischargers, and other interested persons will be given an opportunity to present evidence on whether the Board should adopt the Cleanup and Abatement Order.

The dischargers and interested persons may, but need not, be represented by counsel. Length of testimony may be limited at the discretion of the Board Chair. Interested persons who have similar concerns are requested to select a spokesperson who can represent all of their concerns, if possible. Written copies of testimony to be presented at the hearing should be furnished to the Board on or before 1 November 1991.

Any person adversely affected by an action or inaction of the Board may petition the State Water Resources Control Board within 30 days of the date on which the Board took action. Copies of the law and regulations applicable to filing petitions will be provided on request.

The file on this matter is open to the public for inspection and copying between 8:00 a.m. and 5:00 p.m., weekdays, at the Board's office. Anyone wishing to review the file should call Polly Lowry at (916) 361-5649.

10/4/91

J. Lawrence Pearson
J. LAWRENCE PEARSON, Supervising Engineer

REFERENCE 15

MEMORANDUM

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD - CENTRAL VALLEY REGION

3443 Routier Road, Suite A
Sacramento, CA 95827-3098

Phone: (916) 361-5600
ATSS Phone: 8-495-5600

TO: W. Don Maughan
Chairman
SWRCB

FROM: William H. Crooks
Executive Officer

DATE: 26 November 1991

SIGNATURE: Bill Crooks

SUBJECT: *RESOLUTION REQUESTING THE SWRCB SPONSOR LEGISLATION TO ESTABLISH A STATEWIDE TASK FORCE AND A CLEANUP FUND FOR PCE POLLUTION OF GROUND WATER*

At its 22 November 1991 meeting, the Regional Board continued its hearing regarding the issuance of a Cleanup and Abatement Order against the City of Turlock and a number of owners and operators of dry cleaning establishments within the City.

The Board decided to not vote on the order. Instead, they adopted the attached resolution which requests the State Board sponsor legislation to establish a statewide task force and create a cleanup fund. Attached for your information is a copy of a proposal the Board received from the industry for a Dry Cleaning Industry Task Force.

The Board asked staff to monitor the efforts of this Task Force and if sufficient progress was not being made, to bring the Cleanup and Abatement Order back to the Board for further consideration.

The Board also requested the State Board inform us of the culpability of publicly owned and operated sewer systems for discharges from their collection systems which pollute or threaten to pollute ground water.

We would be happy to meet with your staff and/or provide them with any information they desire.

WHC:icc

Attachments

cc w/Res. 91-247: Regional Board Members
Paul Helliker, Cal-EPA
Interested Parties List

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

RESOLUTION NO. 91-247

REQUESTING THE STATE WATER RESOURCES CONTROL BOARD
SPONSOR LEGISLATION TO
ESTABLISH A STATEWIDE TASK FORCE
AND
CREATE A CLEANUP FUND FOR PCE
POLLUTION OF GROUND WATER

WHEREAS, 215 municip ater supply wells in the Central Valley Region and 800 statewide are, or been, polluted with tetrachloroethylene (PCE); and

WHEREAS, when Regiona Board staff investigated the sources of this pollution, they found, in almost all cases in the Central Valley Region, that, among others, dry cleaners are the source; and

WHEREAS, the same conditions that allowed PCE pollution in the Central Valley Region do exist in other regions of the State; and

WHEREAS, dry cleaners, among others, are required to initiate investigations of PCE pollution and most of these facilities are small businesses with insufficient financial resources to investigate and clean up the ground water pollution; and

WHEREAS, ground water pollution from PCE users is a statewide problem which needs a statewide approach: Therefore be it

RESOLVED, That the Board requests the State Water Resources Control Board sponsor legislation to establish a statewide task force to study this problem, including the creation of a cleanup fund with moneys collected from a fee on PCE sold and/or a fee on users or other possible funding sources. The fund would be used to reimburse PCE dischargers for the costs of investigation and cleanup of ground water polluted with PCE.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on 22 November 1991.

WILLIAM H. CROOKS, Executive Officer

AMENDED 22 November 1991

the people of the state.

Assembly Bill No. 2370

CHAPTER 347

An act to add and repeal Chapter 6 (commencing with Section 42800) of Part 4 of Division 26 of the Health and Safety Code, relating to pollution, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor July 24, 1992. Filed with Secretary of State July 27, 1992.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2370, Cannella. Pollution: dry cleaning: task force.

Existing law requires dry cleaning plants to register with the Bureau of Home Furnishings and Thermal Insulation, and expresses the intent of the Legislature that the provisions relating to registration not affect the statutes, regulations, or the jurisdiction of state agencies relating to control of toxic chemicals used in fabric care and dry cleaning. Existing law requires dry cleaning processes to be completed within fluid tight machines or apparatus, except as specified, and prohibits the use of certain chemicals in dry cleaning.

This bill would establish the California Dry Cleaning Industry Task Force, and would require the task force to prepare a report on prescribed matters relating to the effect of dry cleaning industry practices on the environment. The bill would require submission of the report to the Governor and the Legislature by February 28, 1993. The bill would make its provisions inoperative on March 31, 1993, and repeal the provisions on January 1, 1994.

The bill would declare that it is to take effect immediately as an urgency statute.

The people of the State of California do enact as follows:

SECTION 1. Chapter 6 (commencing with Section 42800) is added to Part 4 of Division 26 of the Health and Safety Code, to read:

CHAPTER 6. DRY CLEANING INDUSTRY TASK FORCE

Article 1. General

42800. This chapter shall be known and may be cited as the California Dry Cleaning Industry Task Force Act of 1992.

42801. The Legislature hereby finds and declares all of the following:

(a) The air, water, and other natural resources are of environmental, economic, public health, and aesthetic importance to the people of the state.

b) The state board has listed perchloroethylene as a toxic air ıtaminant.

c) The dry cleaning industry uses perchloroethylene as a ıning agent and the dry cleaning process is known to emit chloroethylene to the atmosphere in California.

d) Perchloroethylene and other volatile organic compounds e been found in municipal groundwater production wells. Many cleaners have been allowed to discharge water containing chloroethylene to the municipal or industrial sewer. Some of the atile organic compounds in groundwater may have been charged from sewer collection systems or may have resulted from t disposal practices.

e) Air emission control measures designed to reduce chloroethylene emissions can result in additional impacts on ver, groundwater, and hazardous waste disposal resources. ıilarly, removal of perchloroethylene from waste water can result ıdditional impacts on air and hazardous waste disposal resources. coordinated, interdisciplinary approach to the regulation of the cleaning industry is therefore required in order to avoid intended and detrimental environmental effects while ximizing protection of the public health and the environment.

f) The dry cleaning industry is generally composed of lependent, small businesses. Regulation of the dry cleaning lustry should strive to control or avoid any environmentally naging processes while making it possible for small businesses to ow and understand applicable regulations and to comply with all juirements.

(g) It is in the public interest to provide assistance to small dry aning businesses which have limited financial resources to velop and implement emission control measures and investigatory d remedial programs directed towards contributions that these sinesses may have made to existing environmental problems.

12802. For purposes of this chapter, the following definitions ply:

(a) "Dry cleaning" means any process of cleaning fabrics and tiles using organic nonpolar solvents in equipment manufactured this purpose.

(b) "Dry cleaning equipment manufacturing industry" means ablishments that manufacture equipment for use by commercial cleaners.

(c) "Dry cleaning industry" means commercial establishments ıt use any dry cleaning process.

(d) "Task force" means the California Dry Cleaning Industry sk Force created by Section 42803.

Article 2. California Dry Cleaning Industry Task Force

42803. (a) The California Dry Cleaning Industry Task Force is hereby created.

(b) The task force is comprised of the following members:

(1) The Secretary for Environmental Protection.

(2) The Secretary of the Business, Transportation and Housing Agency.

(3) The Executive Director of the State Water Resources Control Board.

(4) A representative of the California regional water quality control boards designated by the Executive Director of the State Water Resources Control Board.

(5) The chairperson of the state board.

(6) The Director of Toxic Substances Control.

(7) A representative of the dry cleaning equipment manufacturing industry, appointed by the chairperson of the task force.

(8) Two representatives of the dry cleaning industry, appointed by the chairperson of the task force.

(9) A representative of the California Air Pollution Control Officers Association.

(10) The chairperson of an appropriate policy committee of the Senate designated by the President pro Tempore of the Senate.

(11) The chairperson of an appropriate policy committee of the Assembly designated by the Speaker of the Assembly.

(12) A representative of a publicly owned treatment works.

(13) A representative from the League of California Cities.

(c) A member of the task force who is unable to attend any meeting may designate a representative to attend and vote on his or her behalf.

42804. (a) The chairperson of the task force shall be the Secretary for Environmental Protection or his or her representative designated pursuant to subdivision (c) of Section 42803.

(b) The task force shall meet at the call of the chairperson of the task force.

42805. The chairperson of the task force, with advice from the task force, shall contract with appropriate professionals from the California State University or University of California system to provide technical support to the task force and to manage the process of collecting and analyzing the information required under Section 42806. All costs associated with this contract, up to an aggregate amount of seventy-five thousand dollars ($75,000), shall be paid by the dry cleaning industry and the dry cleaning equipment manufacturing industry.

42806. The task force shall prepare a report regarding the potential impacts on the environment of existing practices in the dry cleaning industry, and any recommendations for improvements. The

report shall include, to the degree information is available, at least the following:

(a) Inventory and analysis of state and federal laws, rules and regulations, and programs which pertain to the dry cleaning industry, including identification and analysis of any regulatory incentives and disincentives to improvements in the environmental practices of the dry cleaning industry.

(b) Identification of existing types of sources of air pollutants related to the dry cleaning industry.

(c) Estimated quantity of air pollutants attributable to the dry cleaning industry and comparison to total emissions of those pollutants from all sources.

(d) Identification of past and existing types of sources of water pollutants related to the dry cleaning industry.

(e) Estimated quantity of water pollutants attributable to the dry cleaning industry and comparison to total emissions of those pollutants from all sources.

(f) Analysis of the possible ways in which these air and water pollutants may be discharged into the environment.

(g) Identification of past and existing types of sources of hazardous wastes related to the dry cleaning industry.

(h) Identification and analysis of past and existing practices regarding disposal of hazardous wastes by the dry cleaning industry.

(i) Estimated quantity of hazardous waste disposal attributable to the dry cleaning industry and comparison of total disposal of those hazardous wastes by all sources.

(j) Identification and analysis of possible cross-media impacts, including those between and among air, water, and hazardous waste disposal.

(k) Identification and analysis of available technologies for controlling air and water emissions from dry cleaning establishments.

(*l*) Analysis of the economic feasibility and environmental benefit of installing the best available control technology at new facilities or retrofitting that technology at existing facilities.

(m) Identification of potential sources of financial assistance to promote installation of best available control equipment at new facilities and retrofitting of equipment at existing facilities.

(n) Any recommendations to reduce or eliminate discharges of perchloroethylene from dry cleaning while protecting the economic viability of small, independent dry cleaning businesses to the extent possible, consistent with the need to protect public health and the environment.

(o) Inventory of groundwater basins, listed in order of remedial priority, which the California regional water quality control boards suspect may have been contaminated, in whole or in part, by discharges of volatile organic compounds.

(p) Identification of available remedial technologies for treating

volatile organic compound contamination, and an analysis of each, emphasizing the cost effectiveness of the technologies and their effectiveness in protecting public health and the environment.

(q) Discussion of potential funding mechanisms for implementing investigatory and remedial measures and installation of emission control technology.

42807. (a) The task force shall provide an opportunity for public review and comment following release of a draft report.

(b) The chairperson of the task force shall submit a final report to the Governor and the Legislature not later than February 28, 1993. Public comments and any dissenting views of task force members shall be submitted with the final report to the Governor and the Legislature.

42808. This chapter shall become inoperative on March 31, 1993, and as of January 1, 1994, is repealed, unless a later enacted statute, which is enacted before January 1, 1994, deletes or extends the dates on which it becomes inoperative and is repealed.

SEC. 2. This act is an urgency statute necessary for the immediate preservation of the public peace, health, or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting the necessity are:

In order to protect the air and water resources of the state and preserve limited hazardous waste disposal resources, it is necessary that this act take effect immediately.

O

Meeting Agenda

Central Valley Regional Water Quality Control Board

THURSDAY, 20 MAY 1993 - 7:00 P.M.
Graeagle Community Hall
17 Highway 89
Graeagle, California

FRIDAY, 21 MAY 1993 - 8:30 A.M.
Graeagle Fire Hall
Highway 89 & Wasco Trail
Graeagle, California

We would appreciate your filling out an attendance card at the meeting. Filling out the card is voluntary.

Items showing times will begin no sooner than indicated. They may, however, be delayed by previous items.

Please note time limitations may be imposed on presentations.
The Regional Board requests that oral testimony be summarized.
Written comments should be submitted to ensure they will be included in the record before the Board.

THURSDAY, 20 MAY 1993

11:00 a.m. - Walker Mine Tour

The Board will tour Walker Mine, Plumas County, solely to receive information concerning water quality and cleanup activities at the mine. The tour will leave from Beckwourth Airport at 11:00 a.m. No formal action will be taken by the Board.

7:00 p.m. - Graeagle Community Hall, 17 Highway 89, Graeagle

WATER QUALITY ISSUES

1. Status Report on Acid Mine Drainage Control Projects at Mammoth, Keystone, and Stowell Mines and Status of Superfund Cleanup at Iron Mountain Mine - *Information Item*

2. Status Report on Dry Cleaning Industry Task Force and Proposed Legislation - *Information Item*

OTHER BUSINESS

3. Executive Officer's Report

4. The Board will meet in closed session to discuss ongoing litigation in the cases of *Committee to Save the Mokelumne River v. John S. Corkins, et al., U.S. District Court for the Eastern District of California, CIV. NO. S-91-1779-DFL/PAN,* [authorized under Government Code Section 11126(q)(1)]

NOTES

1. Items are numbered for identification purposes only and may not be considered in order.
2. Persons wishing to introduce item exhibits (i.e.. maps, charts. photographs) must leave them with the Board's Executive Assistant. Photographs or slides of large exhibits are acceptable.
3. Persons applying for, or actively supporting or opposing, waste discharge requirements before the Board must comply with legal requirements if they or their agents have or propose contributing $250 or more to a Board member for an election campaign. Contact the Board for details if you fall into this category.
4. The Regional Board may meet in closed session to discuss matters in litigation [Authority: Government Code Section 11126(q)] and to deliberate on a decision to be reached based upon evidence introduced in a hearing [Authority: Government Code Section 11126(d)].
5. All Board files, exhibits, and agenda material pertaining to items on this agenda are hereby made a part of the record.

FRIDAY, 21 MAY 1993 - 8:30 A.M.

Graeagle Fire Hall
Highway 89 and Wasco Trail
Graeagle, California

INTRODUCTION

5. Approval of Minutes of the 371st Regular Meeting of 26 March 1993

*6. Consideration of Uncontested Items - *Uncontested, starred items are expected to be routine and noncontroversial; recommendations will be acted on without discussion. If any interested party, Board or staff member requests discussion, the item will be considered separately.* - **9:00 a.m.**

ENFORCEMENT - 8:30 a.m.

7. City of Portola, Wastewater Treatment Plant, Plumas County - *Consideration of Cease and Desist Order for violation and threatened continued violation of requirements*

8. Greenville Community Services District, Greenville Wastewater Ponds, Plumas County - *Consideration of:*

   a. Waste Discharge Requirements
   b. Cease and Desist Order for violation and threatened continued violation of requirements

9. Lassen County Waterworks District No. 1, Bieber Sewage Treatment Facility, Lassen County - *Consideration of:*

   a. Waste Discharge Requirements
   b. Cease and Desist Order for violation and threatened continued violation of requirements

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS

*10. Uncontested NPDES Permits (see Item 2)

   a. Southern Pacific Transportation Company, Dunsmuir Railyard, Siskiyou County (update)
   b. KF Foods, Inc., and KF Dairies, Inc., Fresno Ground Water Cleanup System, Fresno County (revision)

WASTE DISCHARGE REQUIREMENTS (Land Disposal)

11. Bac-Pritchard Facili... from ... Aircoil Company, Inc., a Subsidiary of Merck and Co., Inc., and Amsted Industries, Interim Gro... removed ... consideration ... System, Merced County (new) - *Ground water cleanup and reinjection to an upgradient a... ...m a past wood treatment facility*

*12. Uncontested Waste Discharge Requirements (see Item 2)

   a. Gladys Bettencourt, Eric Veldhuis, Sonya Veldhuis, Ray Veldhuis, dba 2-Vel Dairy and Bettencourt Feedlot, Merced County (new)
   b. Jaxon Enterprises, Orland Pit, Glenn County (new)
   c. Valley Fruit & Nut, Valley Pistachio, Madera County (new)
   d. Mehdi Orandi, Pistachio Plant, Tulare County (new)
   e. White Wolf Campground, National Park Service, Yosemite National Park, Tuolumne County (update)
   f. Hodgdon Meadow, National Park Service, Yosemite National Park, Tuolumne County (update)
   g. Donald and Katheryn Zandstra, Carr Mine, Butte County (revision)

h. Donald and Katheryn Zandstra, Carr Mine, Butte County (revision)
i. Feather River Hospital, Paradise, Butte County (revision)
j. Heather Glen Community Services District, Heather Glen Mobile Home Park Wastewater Treatment Plant, and Southern Pacific Lines, Placer County (revision)

*13. Uncontested Waste Discharge Requirements Rescissions (see Item 2)

a. Union Oil Company of California, Lost Hills Oil Field, Kern County
b. Union Oil Company of California, Midway Sunset Oil Field, Kern County
c. Union Oil Company of California, South Belridge Oil Field, Kern County
d. Standard Oil Company of California, Kern Front Oil Field, Kern County
e. Petro Lewis Corporation, Kern River Oil Field, Kern County
f. Standing Bear Petroleum Company, Fruitvale Oil Field, Kern County
g. Michael P. Brilhante, Sue Ann Brilhante, John Warren Brilhante, United States Forest Service Sequoia National Forest, Miracle Hot Springs Resort, Kern County
h. McGraw Edison Power Systems Division, Tulare County
i. Alturas Lumber Company, A Subsidiary of WTD Industries, Modoc County
j. Greenhorn Ranch Subdivision No. 1 Road Association and Greenhorn Road Association, Inc., Spring Garden, Plumas County

OTHER BUSINESS

14. Public Forum - *Any member of the public may address the Board on any matter within the Board's jurisdiction*

*15. Consideration of Adoption of 1993-94 State Revolving Loan Fund Project Priority List

16. Adjourn to the 25 June 1993 meeting.

Questions regarding this agenda should be directed to Inge Clarke at (916) 255-3039

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

Board Members	City of Residence	Appointment Category
Karl E. Longley, Chair	Fresno	Undesignated
Hugh V. Johns, Vice Chair	Hanford	Irrigated Agriculture
Hank Abraham, Member	Fresno	Industrial Water Use
Ernie Pfanner, Member	Davis	Water Quality
W. Steve Tompkins, Member	Bakersfield	Water Supply
Clifford C. Wisdom, Member	Stockton	Water Quality
A. Vernon Conrad, Member	Reedley	County Government
Vacancy		Municipal Government
Vacancy		Recreation, Fish or Wildlife

SACRAMENTO OFFICE

William H. Crooks, *Executive Officer*
William S. Johnson, *Asst. Exec. Officer*
Inge C. Clarke, *Executive Assistant*

Address: 3443 Routier Road
Sacramento, CA 95827-3098

Telephone: (916) 255-3000
State Lease Line: 494-3000
Fax: (916) 255-3015

Supervising Engineers

Jack E. DelConte	J. Lawrence Pearson
Paul E. Jepperson	Thomas R. Pinkos

Unit Chiefs

Gordon L. Boggs	Robert J. Matteoli
Jerrold A. Bruns	Larry F. Nash
Wendy L. Cohen	Antonia K. J. Vorster
Kenneth D. Landau	Rudy J. Schnagl
William J. Marshall	Gregory K. Vaughn
F. Wayne Pierson	Dennis W. Westcot

Counsels

Elizabeth Jennings, (916) 657-2421
for Sacramento and Redding offices

Karen O'Haire, (916) 657-2088
for Fresno office

REDDING OFFICE

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Unit Chief: Dennis C. Wilson

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Bert Van Voris, *Supervising Engineer*
William F. Pfister, *Supervising Engineering Geologist*

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Fresno, CA 93726

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Lease Line: 421-5116
Fax: (209) 445-5910

Unit Chiefs

Larry W. Beatty	John M. Noonan
F. Scott Nevins	Lonnie M. Wass
Shelton R. Gray	Dane S. Johnson

GENERAL STATEMENT

The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act.

The purpose of this meeting is for the Board to obtain testimony and information from concerned and affected parties and to make decisions after considering the recommendations made by the Executive Officer.

Any person affected adversely by a decision of this Board may petition the State Water Resources Control Board to review the decision. The petition must be received by the State Board within 30 days of the Regional Board's meeting at which the adverse action or inaction occurred. Copies of the law and regulations applicable to filing petitions will be provided upon request.

The Board and staff welcome information on pertinent problems, but comments at the meeting should be brief and directed to specifics of the case to enable the Board to take appropriate action. Whenever possible, lengthy testimony should be presented in writing and only a summary of pertinent points presented verbally.

ITEM: 2

TITLE: Status Report on the Dry Cleaning Industry Task Force and Proposed Legislation

REPORT: The Dry Cleaning Industry Task Force (TF) was formed by AB 2370 (Cannella) in July 1992. The TF was proposed by the dry cleaning industry at the Board's November 1991 hearing to consider a cleanup and abatement order on the City of Turlock and three dry cleaning shops in the city for ground water contamination with tetrachloroethylene (PCE). The Board did not vote on the proposed C&A but agreed to the TF which the industry stated would provide a report in one year on the statewide issues of pollution from dry cleaners and on potential funding mechanisms to help pay for cleanup.

The TF met for the first time in August 1992 and monthly through the end of the year. Little progress was made in that time, partly because the difficulty in hiring a contractor to do some of the work and the lack of focus on ground water cleanup funding mechanisms.

TF activity increased significantly after the new year, with six meetings held between late January and the end of March. In January, the TF received proposals from CSU Fresno, UC Berkeley, UCLA, and Institute for Research and Technical Assistance in response to a third RFP issed in December. Project teams were interviewed in mid-February, and CSU Fresno was chosen as the TF contractor. Since the TF legislation called for a report by the end of February, the contractor was placed on an accelerated schedule to try to complete a report as soon as possible. The contract calls for a draft report by 23 April 1993. Considered in this schedule were legislative deadlines necessary to move forward with legislation for a cleanup fund during the current session.

Several of the early 1993 TF meetings were devoted to discussions about the cleanup fund, including who should pay into the fund, who should be allowed to receive grants, and whether liability for the contamination should be waived for dry cleaners paying into the fund. There was little agreement between regulatory agencies and dry cleaning industry representatives on these issues. The document, entitled *Interim Analysis*,is expected to be issued by the TF in early May 1993.

The *Interim Analysis* lists the uses of a cleanup fund, potential recipients of grants, and funding alternatives. The report goes on to discuss liability issues in the form of three models: 1) Status Quo; 2) "Fund-Only" Model; and 3) "Self-Insurance" (Limited Liability) Model. The "Fund-Only" model uses the Underground Storage Tank Cleanup Fund as a guide. The fund would be supported by fees from various sources discussed in the *Interim Analysis*, and provide grants to various recipients to clean up soil and ground water polluted with PCE. Cleanup liability would remain with the identified responsible parites, but compliance time schedules in Board and DTSC administrative orders would be tailored to comport with the anticipated timing of a grant from the cleanup fund. The "self-insurance" model is the industry's proposal and includes a cleanup fund and recipients as above. The model also proposes giving owners and operators of dry

cleaning facilities a release from liability for all past contamination if they contribute to the fund, comply with a license or permit, and meet certain "best management practices." The *Interim Analysis* lists issues associated with each model, but does not make a recommendation pending receipt of the full TF report from the contractor. The contractor expects to submit a draft of that report by 17 May 1993.

In mid-April 1993, Assemblyman Cannella agreed to amend his spot bill, AB 495, with language proposed by the dry cleaning industry to implement the industry's full proposal, including the "self-insurance" model desribed above. The proposed legislation would create a cleanup fund with contributions from dry cleaners; allow only water supply agencies to receive money from the fund; create a general permit for dry cleaners which would be in lieu of all other air, water and hazardous substance permits required under any other state or local law or regulation; and relieve dry cleaners of liability for any environmental contamination caused by their operations before 1 January 1993. The proposal is contrary to the TF's *Interim Analysis* in many ways and would be a major shift in state policy regarding responsibility for pollution cleanup.

Cal EPA requested comments from its affected agencies by 16 April 1993 and all three (State Water Resources Control Board, Department of Toxic Substances Control, and Air Resources Board) recommended opposition to the bill for many reasons. The SWRCB's five-page bill analysis included the following concerns:

1. The bill is premature since the TF is still preparing its report and was proposed without the knowledge of or review by the TF.
2. The bill provides insufficient environmental protection because it would supercede all other laws, including the Water Code and the Health & Safety Code. The general permit would be performance-based (not considering water quality protection) and would not even have the intent of protecting the environment.
3. The bill would alter the long-standing concept that polluters pay for cleanup by shifting the cleanup responsibility to innocent water suppliers.
4. The bill addresses only PCE contamination from dry cleaners, not situations where ground water is polluted by PCE from another source or where other chemicals besides PCE pollute ground water. The dry cleaner situation is not unique, and laws of this type could result in many single industry and chemical laws and programs.
5. The bill has insufficient penalties, which could benefit violators.
6. The level of funding proposed is not sufficient to administer the program.

The bill is expected to be in print the first week of May with a hearing scheduled in the Assembly Environment and Safety Committee on 11 May.

RECOMMENDATION: This report is for the Board's information.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 91-815

MONITORING AND REPORTING PROGRAM

FOR

DU RITE CLEANERS
SNOW WHITE CLEANERS
TURLOCK CLEANERS
TURLOCK
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. Mr. Roy Gullo owns and Mr. Rex Swinney operates Du Rite Cleaners in Turlock. Ms. Charlotte Jacobson owns and Mr. Bill Jacobson operates Snow White Cleaners in Turlock. Mr. Arlis Teekel and the Trust of Elby Teekel (Gordon Teekel, Trustee) own Turlock Cleaners in Turlock. Mr. Jitu Kapadia operates Turlock Cleaners.

2. Du Rite Cleaners, Snow White Cleaners, and Turlock Cleaners are hereafter jointly referred to as Dischargers. All three Dischargers are located near one another and all are served by the same sewer line.

3. The Dischargers have used perchloroethylene (PCE) for their dry cleaning operations and all have discharged wastes containing PCE to the sewer.

4. Five soil borings have been made near the three Dischargers and completed as monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5. Three of these wells are near the sewer laterals of each cleaner.

5. PCE contamination was found in the soil and ground water of each of the three monitoring wells drilled near the sewer lateral from each Discharger.

6. The beneficial uses of the ground water beneath the three sites include domestic, municipal, agricultural, and industrial uses.

7. Several domestic, municipal, and industrial wells downgradient of the sites are threatened by the PCE contamination.

IT IS HEREBY ORDERED that Du Rite Cleaners, Snow White Cleaners, and Turlock Cleaners, in order to meet the provisions of Division 7 of the California Water Code and regulations thereunder, shall conduct the following monitoring and reporting programs:

GROUND WATER MONITORING

Ground water monitoring wells MW-1, MW-2, MW-3, MW-4, and MW-5 shall be monitored as specified below:

Constituent	Report in Units of	Type of Sample	Frequency
Water Surface Elevation	ft MSL datum	grab	quarterly
Volatile Organic Compounds 1	ug/l	grab	quarterly

1 Using EPA Method 601 with a detection limit of 0.5 ug/l.

REPORTING

In reporting the monitoring data, the Dischargers shall arrange the data in tabular form so that the date of sampling, date of analyses, the constituents, the concentrations, the units, the analysis method, and method detection limits are readily discernible.

Quarterly monitoring reports shall be submitted by the 15th day of the month following sampling the end of the Calendar quarter.

The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Board.

The Dischargers shall implement the above monitoring program on the effective date of this order.

Ordered by _____
William H.Crooks, Executive Officer

17 July 1991
(date)

PAL/mdm

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
3443 ROUTIER ROAD, SUITE A
Sacramento, CA 95827-3098
PHONE: (916) 361-5600
FAX: (916) 361-5686

PETE WILSON, Governor

21 February 1992

Mr. Rex Swinney
Du Rite Cleaners
141 N. Center Street
Turlock, CA 95380

Mr. Roy A. Gullo
1315 Lyons Avenue
Turlock, CA 95380

REDUCED SAMPLING FREQUENCY OF MONITORING WELLS, DU RITE CLEANERS, SNOW WHITE CLEANERS, AND TURLOCK CLEANERS, TURLOCK, STANISLAUS COUNTY

Monitoring and Reporting Program (MRP) No. 91-815 for the five monitoring wells at Du Rite, Snow White, and Turlock Cleaners has been amended as shown on the attachment. Water level measurement and ground water sampling frequencies have been reduced from quarterly to semi-annual. Both water level measurements and sampling should occur during the expected high and low water table levels, based on water level measurements taken to date. All other provisions of the MRP remain in effect.

If you have any questions, please call me at (916) 361-5649.

Polly Lowry

POLLY LOWRY
Associate Engineering Geologist

PAL:mdm

Attachment

cc: Mr. Gordon Dewers, Stanislaus County Department of Environmental Resources, Modesto
Mr. Dan Wilde, City of Turlock
Mr. Kevin Lally, Cox, Garrett, Nagle, and Lally, Martinez

ATTACHMENT 1

Amended Monitoring and Reporting Program No. 91-815
for
Du Rite Cleaners, Snow White Cleaners, Turlock Cleaners

GROUND WATER MONITORING

Constituent	
Water Surface Elevation	Measurement frequency reduced to semi-annual. Measurements shall be taken during expected high and low water table levels.
Volatile Organic Compounds	Sampling frequency reduced to semi-annual. Samples shall be taken during expected high and low water table levels.

REPORTING

Semi-annual monitoring reports shall be submitted by 15 January and 15 July each year.

Ordered by W.S. Johnson
WILLIAM H. CROOKS, Executive Officer

DATED: 2/21/92

REFERENCE 20

Meeting Agenda

FRIDAY, 4 DECEMBER 1992 - 9:00 A.M.

Central Valley Regional Water Quality Control Board

State Capitol, Room 126
11th (between L & N Streets
Sacramento, California

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Items showing times will begin no sooner than indicated. They may, however, be delayed by previous items.

Please note time limitations may be imposed on presentations.
The Regional Board requests that oral testimony be summarized.
Written comments should be submitted to ensure they will be included in the record before the Board.

INTRODUCTION

1. Approval of Minutes of the 367th Regular Meeting of 23 October 1992

*2. Consideration of Uncontested Items - *Uncontested, starred items are expected to be routine and noncontroversial; recommendations will be acted on without discussion. If any interested party, Board or staff member requests discussion, the item will be considered separately.* - **9:00 a.m.**

ENFORCEMENT

*3. Community of Cottonwood, Shasta County - *Consideration of Rescinding Cease and Desist Order* (see Item 2)

4. The County of Madera and Madera Disposal Systems, Inc., Fairmead Solid Waste Disposal Site, Madera County - *Consideration of Cleanup and Abatement Order* - **9:15 a.m.**

5. Bill and Kay T. Mesman, dba Mesman Dairy, Merced County - *Consideration of Administrative Civil Liability* - **10:00 a.m.**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS

*6. Uncontested NPDES Permits (see Item 2)

a. Silicon Castings, Inc., Sacramento County (new)
b. Beazer East, Inc., Ground Water Extraction and Treatment System, Butte County (new)
c. City of Roseville, Regional Wastewater Treatment Plant, Placer County (renewal)
d. Siskiyou Plumas Lumber Company, Quincy Sawmill, Fred Duchi and Associates, Plumas County (renewal)
e. P&M Cedar Products, Inc., Anderson Division, Shasta County (renewal)

NOTES

1. Items are numbered for identification purposes only and may not be considered in order.
2. Persons wishing to introduce item exhibits (i.e., maps, charts, photographs) must leave them with the Board's Executive Assistant. Photographs or slides of large exhibits are acceptable.
3. Persons applying for, or actively supporting or opposing, waste discharge requirements before the Board must comply with legal requirements if they or their agents have or propose contributing $250 or more to a Board member for an election campaign. Contact the Board for details if you fall into this category.
4. The Regional Board may meet in closed session to discuss matters in litigation [Authority: Government Code Section 11126(q)] and to deliberate on a decision to be reached based upon evidence introduced in a hearing [Authority: Government Code Section 11126(d)].
5. All Board files, exhibits, and agenda material pertaining to items on this agenda are hereby made a part of the record.

WASTE DISCHARGE REQUIREMENTS (Land Disposal)

7. City of Lathrop and Crossroads Sanitary Corporation, Lathrop Industrial Wastewater Treatment Plant, San Joaquin County (new) - *Reconsideration of Denial of Waste Discharge Requirements* **-10:30 a.m.**

8. Clearlake Oaks County Water District, Lake County (renewal)

*9. Uncontested Waste Discharge Requirements (see Item 2)

   a. Robbins Wastewater Treatment Facility, Sutter County (new)
   b. Manual Silva, Joe Coelho, and Mike Coelho, dba Manuel Silva Dairy, Merced County (new)
   c. City of Stockton, French Camp Landfill, Limited Class III Landfill, San Joaquin County (new)
   d. Southern Pacific Transportation Company, Tracy Yard, Interim Land Disposal of Treated Ground Water, San Joaquin County (new)
   e. City of Firebaugh, Domestic Wastewater Treatment Facility, Fresno County (update)
   f. The Cozzitorto Family Dairy, Merced County (update)
   g. American River Aggregates (A Limited Partnership), John Kemp, William Cummings, and Angelo Tsakopoulos, Sacramento County (update)
   h. New Hogan/La Contenta Wastewater Treatment Plant, Calaveras County Water District, La Contenta Golf Course, Calaveras County (update)
   i. Hume Lake Christian Camps, Inc., Wastewater Treatment Facility, Fresno County (revision)
   j. Pacific Coast Producers and Mr. Frank Galvan, Butte County (revision)
   k. Washington/Niagara Mining, Limited Partnership; and U.S. Department of Interior, Bureau of Land Management, Washington Mine and Mill, Shasta County (revision)

*10. Wastewater Reclamation Requirements (see Item 2)

   a. Castle Oaks Golf and Country Club, City of Ione, Amador Regional Sanitation Authority, Castle Oaks Investment Corporation, Amador County (renewal)

*11. Uncontested Waste Discharge Requirements Rescissions (see Item 2)

   a. King Oil Co., Mountain View Oil Field, Kern County
   b. Department of Water Resources, Thermalito Operations and Maintenance Center, Butte County
   c. Lakeshore Resort, Inc., and U.S. Department of Agriculture, Forest Service, Shasta County
   d. Margus Enterprises, Inc., and U.S. Department of Agriculture, Forest Service, Sugarloaf Marina Resort and Campground, Shasta County
   e. Tenco Tractor, Inc., Class II Land Treatment Facility, Sutter County
   f. City of Ceres and Marchy and Sons, inc., Stanislaus County

OTHER BUSINESS

12. U.S. Air Force, Mather Air Force Base, Sacramento County - *Consideration of Ratifying Executive Officer's Decision to Dispute Mather's Refusal to Consider Ground Water Protection in Developing Soil Cleanup Levels*

13. **Update on Dry Cleaning Task Force and Continuing PCE Ground Water Problems**

14. Appointment of Nominating Committee for 1993 Officers

15. Consideration of 1993 Meeting Schedule

16. Public Forum - *Any member of the public may address the Board on any matter within the Board's jurisdiction*

17. Executive Officer's Report

ITEM: 13

TITLE: Update on Dry Cleaning Task Force and Continuing PCE Ground Water Problems

REPORT: In September and November 1991, the Board held hearings to consider issuing a Cleanup and Abatement Order to the City of Turlock and a number of owners and operators of three dry cleaning establishments due to ground water contamination with tetrachloroethylene (PCE). The Board did not vote on the order, but instead adopted a resolution requesting the State Board to sponsor legislation to establish a statewide task force (TF) and create a cleanup fund. Assemblyman Sal Cannella introduced legislation to create the TF on 22 January 1992. The bill passed the Assembly in April and the Senate in July, and was signed by the Governor on 24 July 1992. The report required by the bill is due on 28 February 1993.

The TF met for the first time on 21 August 1992 and has met monthly since then. Three subcommittees covering water, air, and hazardous waste are gathering data and information for various parts of the report. Neither UC nor CSU responded to a TF request for a proposal to conduct $75,000 worth of contract work. A private contractor might be hired if allowed by the law. Without the contract work, the TF may lack the necessary resources and expertise to address adequately all required topics, and the resulting TF report may be inconclusive in some areas.

Investigations and cleanups still are going on at several dry cleaners, while numerous others have stopped or refused to start investigations and/or monitoring. At Merced Laundry in the City of Merced, soil vapor cleanup is ongoing under a USEPA order issued in April 1991. The vapor extraction system (VES) began operation in March 1992, and vapor is treated in the dry cleaner's PCE recovery system along with other vapors from the dry cleaning operation.

At One Hour Martinizing's G Street facility in Merced, a consultant conducted a vapor extraction pilot test. Two vapor extraction wells were installed in March 1992, and soil samples taken during installation contained PCE at every interval tested down to the 30-foot depth of the wells. The VES operated for 30 days and, according to the consultant's calculations, removed about 0.5 pounds of PCE, but staff review showed the report is missing much information.

The City of Merced Redevelopment Agency owns the former site of Simpson's Cleaners, the oldest continuously operating dry cleaner in Merced (the cleaners has moved to a new location in anticipation of the redevelopment project). A Phase II site assessment report submitted in April 1992 showed definition of the PCE plume in the shallow zone is almost complete, but PCE also has been found in the intermediate zone. The City proposed, with staff concurrence, to postpone definition of the deeper plume and

use limited City resources to conduct vapor extraction to soil cleanup. In November 1992, the City issued a request proposals for a VES pilot test.

The Sacramento Regional County Sanitation District completed a soil vapor investigation along its sewer lines near Southgate Norge Cleaners and issued a report in August 1992. The County found high levels of PCE in soil gas along the County's sewer and Southgate Norge's lateral, as well as behind the dry cleaning building. Along the sewer line, PCE levels generally increased with depth, with the highest levels around eight feet deep. In a related matter, the District is implementing a new rule under its pretreatment program prohibiting the discharge of process wastewater from dry cleaners to the sewer.

Ground water beneath the Lincoln Village Shopping Center in Stockton is polluted with PCE. Owned by Lincoln Properties, the shopping center contains three dry cleaners. From 1988 to 1991, Lincoln Properties conducted a multi-phase investigation of the pollution. In fall 1991, staff drafted a C&A which named the owners and operators of the three dry cleaners and Lincoln Properties. Following the Board's action in the Turlock case in November 1991, staff deleted the dry cleaners from the draft order and sent it to all interested parties for comment in February 1992. Since we received extensive comments from Lincoln Properties and two other parties, all objecting to the proposed order, staff postponed issuance of the order pending the outcome of the dry cleaning task force. Meanwhile, Lincoln Properties has filed a lawsuit in federal court against the dry cleaners and the manufacturers of the equipment used in those cleaners, and lawsuit in state court against numerous insurance carriers. A preliminary injunction hearing was scheduled in Federal District Court in Sacramento on 16 November 1992; if the judge determines there are triable issues, a trial will be held in January. The state lawsuit is in discovery.

In Turlock, no further investigation of the extent of pollution at the three downtown dry cleaners has occurred, but two of the cleaners (DuRite and Snow White) have conducted semi-annual monitoring of the five monitoring wells. The June 1992 sample results showed PCE concentrations similar to past monitoring events except the well next to Turlock Cleaners where the PCE level was an order of magnitude higher than any previous result. The operator of Turlock Cleaners, Jitu Kapadia, closed the shop and left town in April 1992. Semi-annual monitoring also has continued at the old Carr's Cleaners in a different part of Turlock, according to owner Harry Boucher, but staff has not received any monitoring reports. In October, Mr. Boucher wrote to the Executive Officer asking to be allowed to discontinue the monitoring. Mr. Crooks agreed, but requested that the outstanding reports be submitted.

Turlock Well No. 5, which was one of the subjects of the staff well investigation that lead to discovery of the pollution at the

dry cleaners, was shut down in April 1992 due to three consecutive monthly samples exceeding the drinking water standard. The City has drilled a new well in a different part of town to replace that supply. Another supply well is just a block away from Well 5 and could become contaminated with Well 5 shut down.

The Department of Toxic Substances Control (DTSC) has been conducting investigations of volatile organic compound (VOC) contamination in ground water underlying the City of Chico since 1989. VOC contamination has caused the closure of six public water supply wells and degraded the water quality in 86 private wells. DTSC has identified five major plumes in the Chico area, with the principal contaminants of concern being PCE and trichloroethylene. Two of the five plumes are being investigated by potentially responsible parties, while DTSC's contractor conducted a Phase III Remedial Investigation (RI) to determine sources and contaminant migration pathways within the other three plumes. Several dry cleaners were identified as sources for two of those plumes, and the former Victor Industries facility was found to be the source for the third plume. The principal mechanism of PCE transport was found to be exfiltration from the sewer system where cracks, sags, and offset joints were identified in the vitrified clay sewer pipes.

The U.S. EPA has conducted studies of PCE contamination in the City of Modesto where City Well 11 was placed on the Superfund list. EPA expects to issue a Phase I Remedial Investigation (RI) report by the end of November and a Phase II RI work plan in February. The Phase I RI included a soil gas survey, monitoring well installation at Halford's Cleaners, and a pumping test on Well 11 to determine its zone of influence. The soil gas survey confirmed staff's previous results identifying Ideal Cleaners, Elwood's Cleaners, and Halford's Cleaners as sources of PCE in soil gas. However, of these, only Halford's was found to be in the zone of influence of Well 11, so EPA will not pursue any further investigation or cleanup at the other two (or at other cleaners in the City found by staff to be potential sources of PCE in other City supply wells). All three monitoring wells installed at Halford's contained soil and ground water contamination. The Phase II RI work plan will focus on defining the extent of ground water pollution and identifying source areas. A VES currently is operating at the site but is not effective in addressing the main soil contamination.

RECOMMENDATION: This is an informational item only.

REFERENCE 21

UTILITIES DEPARTMENT
901 S. WALNUT ROAD
TURLOCK, CALIFORNIA 95380
(209) 668-5590

CLIFFORD A. MARTIN
DIRECTOR OF UTILITIES

August 9th, 1991

Ms. Polly Lowry
Associate Engineering Geologist
CRWQCB CVR
3443 Routier Road, Suite A
Sacramento, California, 95827-3098

Dear Ms. Lowry,

Attached is lab analysis of Mission Linen Service, Carr's, Bright, Durite, Turlock, and Snow White Dry cleaners. Sampling was conducted on 5-20-91, the following method was used. Two samples were collected at the nearest downstream manhole at each location. The first sample was a static sample of the manhole contents. The second sample was collected after running the hydrovac hose to the location of their discharge, into the city main. The hydrovac was then run for sixty seconds to agitate the contents of the main. A sample was collected immediately afterwards.

We have conducted another series of samples on Thursday, August 1st, 1991 using the same method outlined above. This data will be submitted to you once we receive the results.

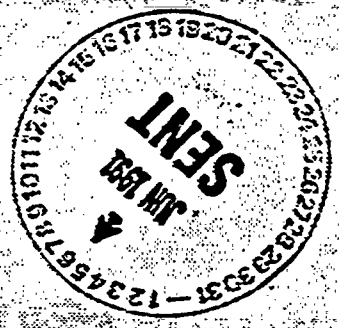
Should you have any questions please do not hesitate to call me at (209) 668-5590.

Sincerely,

Cliff Martin
Utilities Director

cc: City Attorney - Angil Morris
Special Counsel - Jeanne M. Zolezzi
Engineering Consultant - Gerry Nakano

ANALYTICAL LABORATORY REPORT



Prepared For

City of Turlock
901 S Walnut
Turlock CA 95380
Attn: Chester Latif

June 5, 1991

Prepared By

Chemical Waste Management, Inc.
Western Region Laboratory
P.O. Box 4249
1400 Carpenter Lane, Suite D
Modesto, California 95352
Telephone (209) 527-4050
FAX (209) 527-6041

Report Approved By Lab Director

Certificate Of Analy

EPA Methods 601/602 Purgeable Halocarbons and Aromatics

Laboratory Sample ID		L02820-1	L02820-2	L02820-3	L02820-4	L02820-5	L02820-6
Date Received		5/20/91	5/20/91	5/20/91	5/20/91	5/20/91	5/20/91
Date Collected		5/20/91	5/20/91	5/20/91	5/20/91	5/20/91	5/20/91
Your Sample ID		Carrs Pre	Carrs Post	Bright Pre	Bright Post	Durite Pre	Durite Post
Parameter	Units	Results	Results	Results	Results	Results	Results
Chloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	µg/L	<0.5	<0.5	<0.5	0.667*	4.20*	1.38*
Trichlorofluoromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	µg/L	<0.5	<0.5	<0.5	3.25	<0.5	0.668
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene (TCE)	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	3.95
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl Ether	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene (PCE)	µg/L	<0.5	<0.5	<0.5	<0.5	15.1	27.2
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	4.03
1,2-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	µg/L	5.67	1.55	<0.5	<0.5	<0.5	43.3
Benzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	1.19	1.30	15.8	37.5	2.36	0.965
Ethyl Benzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylenes (Total)	µg/L	<0.5	<0.5	<0.5	<0.5	258.	62.0

*Methylene Chloride was found in blank at 1.36 ppb

Certificate Of Analysis

EPA Methods 601/602 Purgeable Halocarbons and Aromatics

Laboratory Sample ID		L02820-7	L02820-8	L02820-9	L02820-10	L02820-11	L02820-12
Date Received		5/20/91	5/20/91	5/20/91	5/20/91	5/20/91	5/20/91
Date Collected		5/20/91	5/20/91	5/20/91	5/20/91	5/20/91	5/20/91
Your Sample ID		Turlock Pre	Turlock Post	White Pre	White Post	Linen Pre	Linen Pst
Parameter	Units	Results	Results	Results	Results	Results	Results
Chloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	µg/L	0.520*	1.20*	1.28*	1.01*	1.12*	0.537*
Trichlorofluoromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	48.3	9.25
Carbon Tetrachloride	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene (TCE)	µg/L	45.6	30.4	<0.5	9.34	<0.5	1.40
Dibromochloromethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	µg/L	<0.5	<0.5	<0.5	1.04	<0.5	<0.5
1,1,2-Trichloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl Ether	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene (PCE)	µg/L	320.	11.9	3.29	12.8	73.6	21.1
Chlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	µg/L	2.17	1.82	<0.5	<0.5	6.73	141.
1,3-Dichlorobenzene	µg/L	<0.5	<0.5	<0.5	<0.5	0.807	3340.
1,4-Dichlorobenzene	µg/L	5.35	3.86	5.49	10.4	2.51	7400.
Benzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	2.07	5.82	0.978	<0.5	51300.	5480.
Ethyl Benzene	µg/L	<0.5	<0.5	<0.5	<0.5	6320.	114.
Xylenes (Total)	µg/L	<0.5	<0.5	5.88	<0.5	23100.	2740.

*Methylene Chloride was found in the blank at 1.36 ppb

Certificate Of Analysis

EPA Methods 601/602 Purgeable Halocarbons and Aromatics

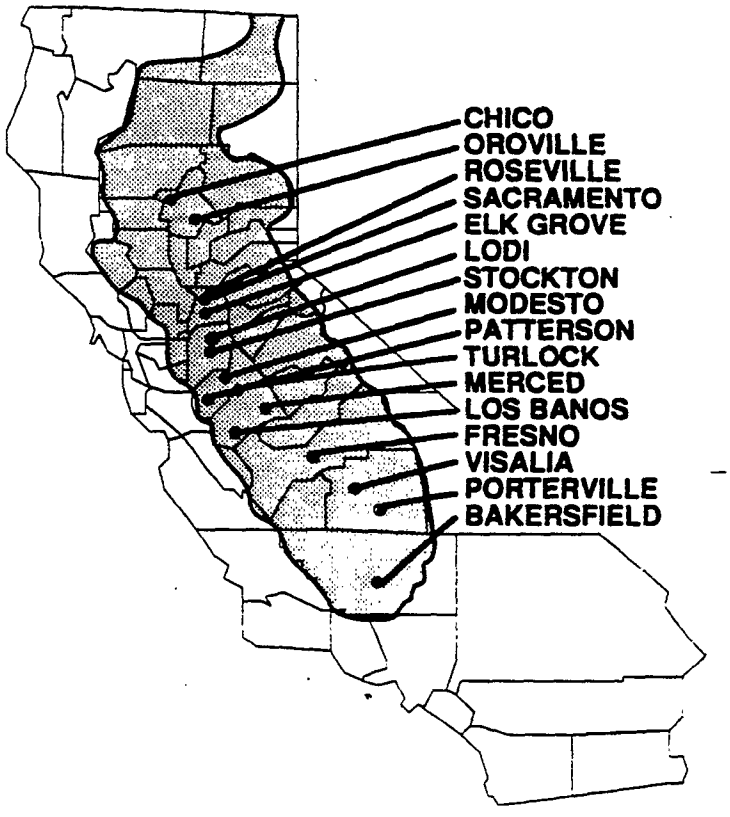
Laboratory Sample ID	L02820-13					L02820-8
Date Received	5/20/91					5/20/91
Date Collected	5/20/91					
Your Sample ID	Trip Blank					

Parameter	Units	Results	Results	Results	Results	Results	Results
Chloromethane	µg/L	<0.5					
Bromomethane	µg/L	<0.5					
Dichlorodifluoromethane	µg/L	<0.5					
Vinyl Chloride	µg/L	<0.5					
Chloroethane	µg/L	<0.5					
Methylene Chloride	µg/L	<0.5					
Trichlorofluoromethane	µg/L	<0.5					
1,1-Dichloroethene	µg/L	<0.5					
1,1-Dichloroethane	µg/L	<0.5					
trans-1,2-Dichloroethene	µg/L	<0.5					
Chloroform	µg/L	<0.5					
1,2-Dichloroethane	µg/L	<0.5					
1,1,1-Trichloroethane	µg/L	<0.5					
Carbon Tetrachloride	µg/L	<0.5					
Bromodichloromethane	µg/L	<0.5					
1,2-Dichloropropane	µg/L	<0.5					
cis-1,3-Dichloropropene	µg/L	<0.5					
Trichloroethene (TCE)	µg/L	<0.5					
Dibromochloromethane	µg/L	<0.5					
trans-1,3-Dichloropropene	µg/L	<0.5					
1,1,2-Trichloroethane	µg/L	<0.5					
2-Chloroethylvinyl Ether	µg/L	<0.5					
Bromoform	µg/L	<0.5					
1,1,2,2-Tetrachloroethane	µg/L	<0.5					
Tetrachloroethene (PCE)	µg/L	<0.5					
Chlorobenzene	µg/L	<0.5					
1,2-Dichlorobenzene	µg/L	<0.5					
1,3-Dichlorobenzene	µg/L	<0.5					
1,4-Dichlorobenzene	µg/L	<0.5					
Benzene	µg/L	<0.5					
Toluene	µg/L	<0.5					
Ethyl Benzene	µg/L	<0.5					
Xylenes (Total)	µg/L	<0.5					

DRY CLEANERS— A MAJOR SOURCE OF PCE IN GROUND WATER

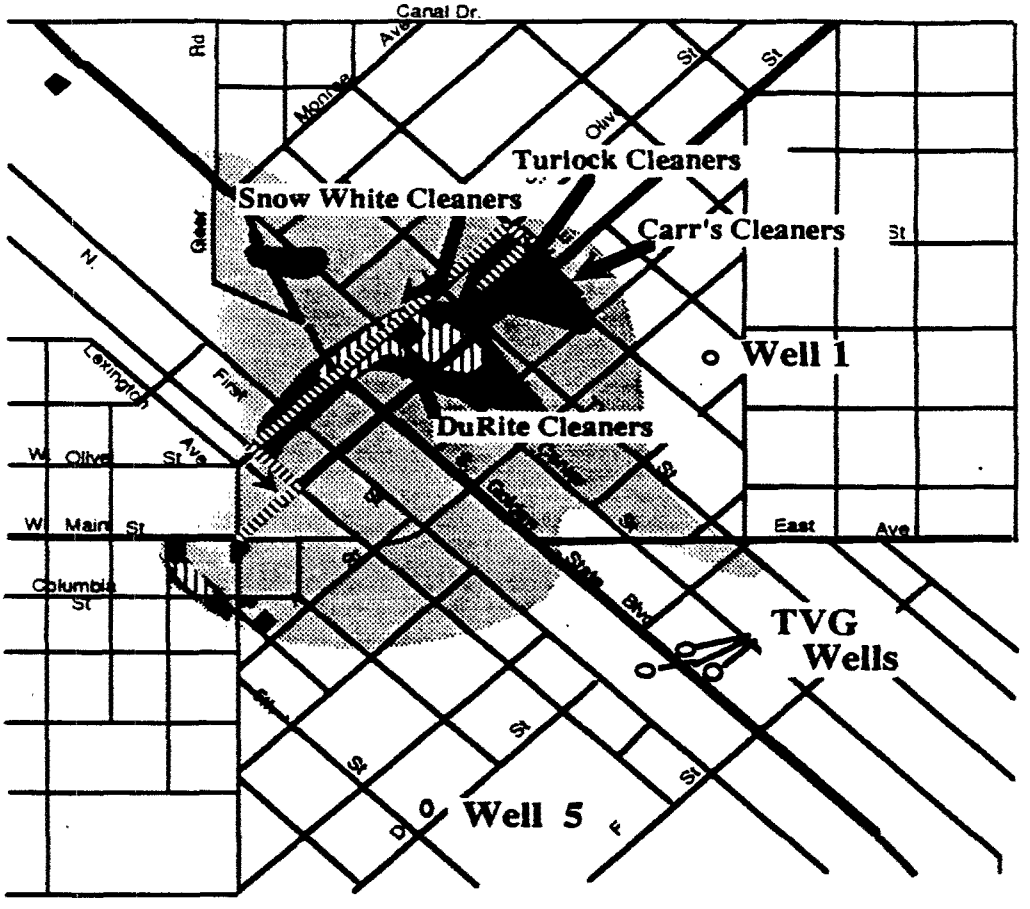
27 March 1992

CENTRAL VALLEY
CITIES WHERE MUNICIPAL WELLS ARE AFFECTED BY
TETRACHLOROETHYLENE (PCE)



WELL INVESTIGATION PROGRAM

TURLOCK SOIL GAS SURVEY



- ACTIVE DRY CLEANER
- INACTIVE DRY CLEANER
- WELL
- SEWER LINE
- 10,000-100,000 PCE ION COUNT
- 100,000-200,000 PCE ION COUNT
- >200,000 PCE ION COUNT

0 SCALE 1/2

MILES

N

Figure 16

SEWER MAIN SAMPLING

Three samples are usually taken from the sewer: an upgradient, a downgradient and a flush sample. The upgradient (background) and downgradient samples are taken at the sewer access just above and below where the dry cleaner's sewer lateral enters the main (Figure 18). All samples are taken by placing a jar on a pole and scooping liquid into the jar. The liquid is then poured into volatile organic analysis (VOA) bottles and sent to a California certified lab for analysis. The flush sample is taken after stirring up the bottom sediment by adding large quantities of water (and sometimes running a ball down the line). The flush sample is taken at the downgradient sewer access, when an increase of flow is noted (Figure 18).

The concentration of PCE in the downgradient sample has always exceeded that in the upgradient sample, and in most cases PCE in the upgradient sample was not detected. When flush samples were taken, their PCE content almost always exceeded that in the downgradient sample. Since water is being added to the system, one would expect the PCE concentration to decrease in the flush sample because of dilution. Therefore, the increase indicates that PCE liquids or sludges are sitting on the bottom of the sewer line.

SEWER SAMPLING ADJACENT TO DRY CLEANERS

	Upgradient ppb	Downgradient ppb	Flush ppb
MERCED			
Merced Laundry	-	180	-
One Hour Martinizing "R"	NF	110	23,000
One Hour Martinizing "G"	NF	730	96,000
Simpson Cleaners	-	-	6,300
Sunshine Cleaners	NF	-	167,000
Parkway Cleaners	NF	853	280,000
SACRAMENTO			
Southgate Norge Cleaners	NF	350	830
ROSEVILLE			
Deluxe Cleaners	-	120	260
Tillets Cleaners	NF	28	380
TURLOCK			
Carr's Cleaners	<0.5	14	2.5
Snow White Cleaners	1,800	3,800	220
Turlock Cleaners	NF	3,500	<25
Bright Cleaners	<0.5	0.6	23,000
Durite Cleaners	35	190	<5
LODI			
Busy Bee	NF	700	280,000
Woodlake Cleaners	-	620	210,000
Guild Cleaners	<0.5	24	<5
	Median	190	3,565
	Average	748	67,937

NF - NO FLOW

Figure 18

CITY OF MERCED

Between 12 January and 2 February 1989, the City of Merced conducted soil sampling near four dry cleaners. The City staff did a video scan of the sewer lines at each of the cleaners to check for possible leaks. After these scans, they drilled a soil boring adjacent to the sewer line downgradient of each facility where a problem was seen on the video tape. If the tape showed no problem, they drilled adjacent to the sewer line near the dry cleaner. In each boring they took several soil samples and had them analyzed for VOCs by EPA Method 8010. They also took soil vapor measurements using a Sensidyne-Gastec system (similar to Draeger tubes) with a detection limit of 400 ppb.

In addition to the City's work, each dry cleaning facility had a monitoring well (MW) drilled as required by staff. Soil samples were taken every five feet during drilling and analyzed for VOCs using EPA Method 8010. One ground water sample was taken from each well and analyzed for VOCs using EPA Method 601.

Parkway Cleaners

Figure 19 contains the data from the Parkway Cleaners site. The MW was drilled approximately 22 feet from Parkway's sewer lateral and 15 feet from the sewer main. Soil samples from the well boring had low levels of PCE (<5 ppb). The concentration of PCE in the ground water was 160 ppb.

The City's video scan of the sewer main showed no breaks in the clay pipe. Because of this, the City arbitrarily selected a soil boring site adjacent to the sewer line, six feet downgradient from Parkway Cleaners' sewer lateral. The PCE concentration in the soil sample in the City soil boring was 120 times

REFERENCE 23

John M. Minney, Consulting Engineer
4180 W. Alamos, Suite 102
JMM Fresno, California 93722
(209) 275-5937

March 4, 1991 JOB 90014

Glenn J. Holder, Attorney
Baker, Manock, Jensen
5260 N Palm, Fourth Floor
Fresno CA 93704-2209

Site Assessment
Snow White Cleaners
352 E. Olive
Turlock, California

Gentlemen:

We are hereby transmitting the site assessment for the forementioned project. The assessment has been performed by reviewing data provided by others. The previous data indicates a rather substantial area of downtown Turlock which has been determined to contain PCE and TCE in the groundwater. An effort has been made to determine the source of such constituents. The data suggests that the source of the groundwater constituents is exfiltration from the local sewer lines. A method for further delineating the source is provided herein, primarily using existing monitoring points.

If you have any questions or comments in this regard, please do not hesitate to contact me.

Respectfully submitted,

John M. Minney, Consulting Engi...

John M. Minney
CE 32537
GE 602
REA 00212

REGISTERED PROFESSIONAL ENGINEER
JOHN M. MINNEY
No. 32537
Exp. 6/30/93
CIVIL
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
JOHN MINNEY
No. 602
Exp. 6/30/93
GEOTECHNICAL
STATE OF CALIFORNIA

REGISTERED ENVIRONMENTAL ASSESSOR
JOHN MINNEY
No. 00212
STATE OF CALIFORNIA

JMM/lns

Enclosures

Distribution: Baker, Manock and Jensen (5 copies)

capability of PCE and TCE to act upon the diffuse double layer which surrounds tiny soil particles. Tiny soil particles (e.g. individual clay particles) have a surface layer which carries a high electrical charge. This electrical charge, like static electricity, can overcome gravity forces for small particles and cause the soil to cling to parts or clothing. When the tiny soil particle is immersed in PCE or TCE, however, the electrical charge is neutralized and the soil particle falls off. Because of the high volatility of PCE and TCE, the solvent soon evaporates and a clean surface is left behind.

The same fundamental properties which make PCE and TCE so valuable as cleaning agents make them extremely problematical in sewer lines, landfills, groundwater, or soil. Conventional soil particles are able to impede or attenuate the passage of contaminants primarily through the blocking action of the clay fraction. The larger the clay fraction, the better the attenuation or impedance. The clay particles never actually touch in the soil matrix. They are compressed together until their diffuse double layers generate enough electrical repulsive force to overcome the gravity forces of compression. When PCE or TCE enters the soil or groundwater media, the ability to neutralize the electrical charges in effect allows these constituents to open up the soil in order to pass through rapidly. In media which are already open (sewer lines and landfills), the PCE and TCE can move large distances in vapor form.

It should be noted that PCE and TCE also are known to degrade into other products. The standard breakdown chain is PCE to TCE to dichloroethylene (DCE) to vinyl chloride.

GEOLOGIC PROFILE

The Regional Geologic Information is shown on Figure 3. The subsurface profile consists of an upper and lower unit with an intervening clay stratum[1]. The upper unit is frequently termed the unconfined aquifer and the lower unit the confined or pressure aquifer. The intervening clay stratum is frequently called the Corcoran Clay or the E-Clay.

The upper unit consists of beds, lenses and tongues of clay, sand and gravel. In the Turlock area, the soils are arkosic sediments derived from erosion of the Sierras. The ground surface in the Turlock area is about 100 feet above sea level. The top of the Corcoran Clay is about sea level. Therefore, the upper unit is about 100 feet thick.

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[1] Generalized Subsurface Geology of the Water Bearing Deposits, Northern San Joaquin Valley, California, Hotchkiss, W. R., USGS, May 12, 1972.

JMM

5. Clean bailer thoroughly.

6. Mark all samples. Keep independent sample record.

7. Store samples in styrofoam container during the day. Do not allow samples to be in water directly. Keep samples cool, - constant temperature. Avoid vigorous shaking.

8. Arrange for BSK Laboratory to receive samples on same day as taken. Make copy of data sheet for your personal files. Fill out chain of custody forms.

The water samples will be tested by EPA 601/602 and the soil samples, by the corresponding EPA 8010/8020 method. Nitrate, nitrogen and coliform bacteria will be tested by the standard tests for drinking water. The tests will be performed by BSK and Associates which is certified by DOHS for this procedure.

3. I conclude that it is unlikely that the dry cleaning establishments caused the contamination which has begun this entire investigation. The pattern of soil gas results prepared by the State seems more to disprove the dry cleaning establishments as the source of contamination for Well No. 1 and the TVG Wells. The drop off in peak values is 90% within about one block of the cleaners, with an additional 90% decline before reaching any of the impacted wells.

Assuming that discharge from the dry cleaning establishments was entering groundwater at or near the facilities, the direction of the regional groundwater gradient is such that it would not move the contamination towards the impacted wells. The impacted wells are east-southeast of the suspected source, whereas the regional flow is west-southwest.

Assuming that the PCE is initially transported through the sewer system, from where leakage is initiated ultimately into the aquifer, the case even appears weaker. The location of the sewage treatment plant is southwest of Turlock, meaning that leakage from lines between downtown and the plant is even farther downgradient from the contaminated wells than the downtown area itself.

4. I conclude that there must be other sources of contamination in the general area other than those that have been identified by the RWQCB. The RWQCB has made an issue of the presence of PCE in discharges from the dry cleaning establishments. It is important to note the actual volumes of PCE involved. For instance, a bucket of water destined for the sewer line was tested and found to contain 140 parts per billion PCE. This corresponds to 1/200th of a drop of PCE destined for the sewer on an infrequent basis.

Geology of the Fresh Ground-Water Basin of the Central Valley, California, with Texture Maps and Sections

By R. W. PAGE

REGIONAL AQUIFER-SYSTEM ANALYSIS

U.S. GEOLOGICAL SURVEY PROFESSIONAL PAPER 1401–C

UNITED STATES GOVERNMENT PRINTING OFFICE WASHINGTON 1986

CONTENTS

ILLUSTRATIONS

[Plates are in pocket]

TABLES

[Tables are in pocket]

CONVERSION FACTORS

For the readers who may prefer to use the International System of Units (SI) rather than inch-pound units, the conversion factors for the terms used in this report are listed below.

Multiply	By	To obtain
acres	0.4047	(hectares)
feet	0.3048	(meters)
gal/min (gallons per minute)	0.00006309	(cubic meters per second)
inches	25.4	(millimeters)
miles	1.609	(kilometers)
mi^2 (square miles)	2.590	(square kilometers)

ley. He discussed the geology of the valley and its relation to the occurrence of ground water and yield to wells. He also discussed land forms.

Forbes (1931) discussed the geology and groundwater storage capacity of the San Joaquin Valley but did not include a geologic map.

Hoots and others (1954) wrote a geological summary of the San Joaquin Valley. The report discusses the structure and general stratigraphy of the valley. The report also includes eight paleogeographic maps that show the distribution and thickness of sediments ranging in age from Paleocene to Pleistocene.

Davis and others (1959) wrote a comprehensive report on the geology, geomorphology, and ground water of the San Joaquin Valley; they did not include a geologic map but did discuss the geologic history of the San Joaquin Valley in some detail. They also discussed the occurrence of a diatomaceous clay that underlies a large part of the San Joaquin Valley.

Repenning (1960) discussed the general stratigraphy of the Central Valley, and in his report included a map showing the thickness of sedimentary rocks in the valley and seven maps showing the distribution and thickness of sediments ranging in age from Paleocene to Pleistocene.

Olmsted and Davis (1961) wrote a comprehensive report on the geology, geomorphology, ground water, and geologic history of the Sacramento Valley. The geologic map included in their report is considered to be the best reference for the Sacramento Valley on geology pertaining to ground water.

Hackel (1966) described the general stratigraphy and structure of the Central Valley and included Repenning's maps in his report.

Croft (1972) mapped the subsurface geology of the upper Tertiary and Quaternary water-bearing deposits of the southern part of the San Joaquin Valley. He also mapped three extensive clays that function as confining beds.

Redwine (1972) discussed the subsurface geology of the Sacramento Valley and mapped geologic units on six cross sections. His discussion of some of the stratigraphic units occurring in the subsurface of the Sacramento Valley is extensive.

Page (1974) mapped the base and thickness of the post-Eocene continental deposits in the Sacramento Valley. Included in his report is a structure-contour map of the base of those deposits.

The California Department of Water Resources (1978) wrote another comprehensive report on the geology, geomorphology, and ground water of the Sacramento Valley. That report includes a discussion of soils and of geologic structures that affect the movement of ground water.

Harwood and Helley (1982) mapped the major late Cenozoic structural features and depth to the basement of the Sacramento Valley.

Numerous other reports also have been written concerning the geology of local areas in the Central Valley, including a number of recently published maps and reports. Many of those reports are listed under "Selected References".

WELL-NUMBERING SYSTEM

Wells are identified according to their location in the rectangular system for the subdivision of public lands. For example, in the number 12N/1E-34Q1, the part of the number preceding the slash indicates the township (T. 12 N.); the number after the slash, the range (R. 1 E.); the digits after the hyphen, the section (sec. 34); and the letter after the section number, the 40-acre subdivision of the section, as indicated on the diagram below.

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

Within each 40-acre tract the wells are numbered serially as indicated by the final digit of the well number. For example, well 12N/1E-34Q1 was the first well to be listed in the SW¼SE¼ sec. 34. The final digit has been omitted for wells not field located by the Geological Survey.

Most of the study area lies north or south and east or west of the Mount Diablo base line and meridian (M). A small area at the southern part of the valley lies north and west of the San Bernardino base line and meridian (S), but no wells in the study area are referred to this base line.

GEOLOGY

The Central Valley is a large, northwestward-trending, asymmetric structural trough that has been filled with as much as 6 vertical miles of sediment in the San Joaquin Valley and as much as 10 miles of sediment in the Sacramento Valley; these sediments range in age from Jurassic to Holocene and include both marine and continental rocks and deposits (fig. 3) (Repenning, 1960, p. 7, fig. 2). The sediments beneath part of the eastern side of the valley are underlain by

maximum thickness is about 1,600 feet (Lydon, 1969), and beneath the valley it thins to about 300 feet; west of the Chico Monocline it is about 1,000 feet thick (California Department of Water Resources, 1978, table 1). There, the Tuscan consists largely of black volcanic sand, gravel, and tuffaceous clay, which probably were derived from beds of tuff breccia reworked by streams. Some beds of tuff breccia underlie the valley at distances of 5 to 10 miles from the outcrop of the Tuscan.

The Tuscan Formation yields large quantities of fresh water to wells; reported yields range from 900 gal/min to more than 3,000 gal/min (California Department of Water Resources, 1978, p. 25; Olmsted and Davis, 1961, p. 72). Because the Tuscan contains beds of clay and tuff breccia, most ground water in the Tuscan is confined (California Department of Water Resources, 1978, p. 25).

CONTINENTAL ROCKS AND DEPOSITS

From the Paleocene through the Oligocene, continental rocks and deposits were restricted chiefly to the northern, eastern, and southeastern parts of the Central Valley; during the early and middle Miocene, continental rocks and deposits occupied most of the valley north of Fresno as well as narrow belts along the southeastern and southern parts of the San Joaquin Valley (Repenning, 1960, figs. 5-8). During the late Miocene, continental rocks and deposits occupied the central and eastern parts of the valley north of Merced and a narrow belt along the eastern side of the valley from Merced to just south of Fresno; they also occupied an area on the western side of the valley opposite Fresno and part of the southeastern San Joaquin Valley (Repenning, 1960, fig. 10). By Pliocene time, continental rocks and deposits occupied all of the Sacramento Valley and most of the northern part of the San Joaquin Valley, as well as wide belts along its eastern and southern parts (Repenning, 1960, fig. 10). After the Pliocene, only continental rocks and sediments were deposited in the valley. Further, after a major uplift of the surrounding area during the middle Pleistocene, the valley evolved to its present-day form, which has contributed to erosion of many of the older rocks and deposits and a more restricted area of deposition for the younger deposits.

The older continental rocks and deposits crop out along the flanks of the Central Valley, and the younger deposits crop out along streams and along the flanks and throughout the rest of the valley (pls. 1 and 2).

Because of their depositional history, these rocks and deposits also differ greatly in sediment type, sorting, and thickness. The types of deposit include alluvial fan, deltaic, flood basin, lacustrine, marsh, and river, as well as sand dunes. In places, volcanic rocks and deposits of Tertiary age are associated with the continental rocks and deposits. The continental rocks and deposits range in thickness from 0 foot along the flanks of the valley to more than 15,000 feet just north of Wheeler Ridge in the southern part of the San Joaquin Valley. There, rapid downwarping contributed to this very thick section of post-middle Pliocene continental rocks and deposits (de Laveaga, 1952, p. 102). In this part of the valley, however, the base of fresh water lies at a maximum depth of about 4,700 feet (Page, 1973); this is therefore the thickest section that contains fresh water in the Central Valley.

CONTINENTAL ROCKS AND DEPOSITS (TERTIARY)

This part of the report includes a discussion of (1) four units of continental rocks and deposits of Tertiary age in the Sacramento Valley and (2) four units in the San Joaquin Valley. The units are grouped by age and some lithologic similarity; some units include more than one formation or informal unit. Symbols of map units (pls. 1 and 2) are included for clarity.

One of the units, continental rocks and deposits of uncertain age (Tcu), occurs only in the Sacramento Valley, and one, continental rocks and deposits of Eocene to Miocene(?) age (Tcme), occurs only in the San Joaquin Valley (pls. 1 and 2). Three of the units of continental rocks and deposits in the Sacramento Valley are also present in the San Joaquin Valley; they are (1) of Eocene age (Tce), (2) of Oligocene and Miocene age (Tcmo), and (3) of Miocene and Pliocene age (Tcpm) (pls. 1 and 2; tables 1 and 2).

Older Tertiary continental rocks and deposits yield some water to wells, but they are not important to the fresh ground-water basin of the Central Valley. On the other hand, some of the younger Tertiary rocks and deposits yield large quantities of ground water to wells.

Some of the older continental rocks and deposits of Tertiary age are not of great importance to the fresh ground-water basin of the Central Valley because they contain saline water, or the nature of their sediments prevents large yields to wells, or both. Included in this group are the Ione Formation of Eocene age (Tce) and the Valley Springs Formation of Oligocene and Miocene age (Tcmo). The Oligocene and Miocene age of the Valley Springs is based on the work of Marchand and Allwardt (1981, p. 10). Brief discussions of these formations are included herein.

Other Tertiary continental rocks and deposits are generally of such limited extent that they are not of great importance to the ground-water basin and are

therefore not discussed further in this report; these include, for example, the continental rocks and deposits of uncertain age (Tcu) in the eastern part of the Sacramento Valley and the Bena Gravels of Miocene age (Tcmo) in the southern part of the San Joaquin Valley. Also omitted from discussion are rocks and deposits that generally are not penetrated by water wells, lie at extreme depths, and at depth contain saline water—such as the Walker Formation of late Eocene through early Miocene age (Tcme) and the Zilch formation of informal subsurface usage, which is considered to be the widespread continental equivalent of the Temblor Formation of Oligocene and Miocene age (Tm) (Hunter, 1952, p. 21; Repenning, 1960, fig. 8). The Chanac Formation of Miocene age (Tcpm) (Bartow, J. A., and McDougall, K. A., written commun., 1982) probably belongs in this group, too, because it is reportedly penetrated only by oil wells in the subsurface of the southern San Joaquin Valley (Wood and Dale, 1964, p. 37).

On the other hand, the Mehrten Formation of Miocene to late Pliocene age (Tcpm) is a unit of continental rocks and deposits of Tertiary age that is of great importance to the fresh ground-water basin of the Central Valley.

Ione Formation

The Ione Formation crops out discontinuously along the eastern flank of the valley from just south of Chico to just north of Fresno (pls. 1 and 2, tables 1 and 2). In most areas of outcrop, it lies unconformably on pre-Tertiary rocks and dips gently southwestward beneath the Central Valley. The Ione is composed of clay, sand, sandstone, and conglomerate. Where exposed, it ranges in thickness from 0 to about 400 feet in the Sacramento Valley and from 0 to 200 feet in the San Joaquin Valley (California Department of Water Resources, 1978, p. 20; Davis and Hall, 1959, p. 8). Allen (1929) considered it largely deltaic in origin; Piper and others (1939, p. 84) considered it largely fluviatile with some lacustrine and lagoonal deposits. Large parts of the Ione, however, were considered marine by Redwine (1972, p. 100-104). Because of the clay and consolidated rocks, the Ione Formation yields only small quantities of water to wells, and in places it reportedly yields saline water (California Department of Water Resources, 1978, p. 21; Davis and Hall, 1959, p. 8).

Valley Springs Formation

The Valley Springs Formation crops out discontinuously along the eastern flank of the valley from just south of the Bear River to just north of the Chowchi River (pls. 1 and 2, tables 1 and 2). In most areas, t formation lies unconformably over the Ione Formati or the pre-Tertiary rocks and dips gently southwe ward beneath the valley. The Valley Springs is mostly fluvial sequence of chiefly sandy clay, quar sand, rhyolitic ash, and siliceous gravel (Davis an Hall, 1959, p. 8-9); east of Modesto the Valley Spring was believed by Page and Balding (1973, p. 17) and th U.S. Bureau of Reclamation (written commun., 195 and 1959) to be composed chiefly of rhyolitic tuff an some siltstone and claystone. Bartow (1982) consid ered the Valley Springs to have been deposited on poorly drained coastal plain that was occasionall blanketed by ash deposits. Where exposed or when recorded on well logs, the Valley Springs ranges i thickness from 0 to about 200 feet in the Sacramento Valley and from 0 to about 450 feet in the San Joaquin Valley (California Department of Water Resources 1978, p. 78; Piper and others, 1939, p. 77).

Because of its fine ash and clay matrix, the Valley Springs is generally a small-yield aquifer, although one well in the Modesto area yielded 710 gal/min (Page and Balding, 1973, p. 17).

Mehrten Formation

The Mehrten Formation crops out discontinuously along the eastern flank of the valley from just south o the Bear River to just south of the Chowchilla Rive (pls. 1 and 2; tables 1 and 2). It overlies the Valley Springs Formation and in places lies uncomformably on pre-Tertiary rocks (pls. 1 and 2). The Mehrten dips gently southwestward beneath the valley, and there it is considered to interfinger with marine and non marine facies of the Neroly Formation of Miocene age (Davis and Hall, 1959, p. 10).

Piper and others (1939, p. 61-71) were the first to describe the Mehrten Formation; they designated its type section as being in the NE¼ SW¼ sec. 5, T. 4 N., R. 9 E. There, the Mehrten is composed of about 190 feet of clay and silt and andesitic sandstone and breccia (Piper and others, 1939, p. 62).

In the Sacramento Valley, the Mehrten can be divided into two units: (1) an overlying unit composed mostly of unconsolidated black sands interbedded with blue-to-brown clay and (2) an underlying unit of hard, very dense tuff breccia (California Department of Water Resources, 1978, p. 21). Where exposed in the Sacramento Valley, the Mehrten is as much as 200 feet thick, and in the subsurface it ranges in thickness from 400 to 500 feet. In the northeastern part of the San Joaquin Valley, Davis and Hall (1959, p. 10) divided the Mehrten into three units: a lower unit of scoria-

ceous and pumiceous sand and conglomerate that has a maximum thickness of about 40 feet where exposed; a middle unit of alternating andesitic gravel, sand, and silt that has an estimated thickness of about 400 feet where exposed; and an upper unit of soft clay, silt, sand, and minor amounts of gravel that has an aggregate thickness of about 300 feet where exposed. Further, they indicated that the Mehrten attains a maximum thickness of about 1,200 feet in the western part of the Modesto area where it lies at a depth of about 1,100 feet (Davis and Hall, 1959, pl. 3). There, however, the Mehrten contains saline water (Page and Balding, 1973, fig. 6). Marchand and Allwardt (1981, p. 10) stated that the Mehrten in the Modesto-Merced area consists of claystone, siltstone, sandstone, and conglomerate; they also observed a general decrease in mean grain size in the Mehrten from the Stanislaus River on the north to near the Fresno River on the south. The Mehrten Formation is considered to have been laid down by streams carrying andesitic debris from the Sierra Nevada (Marchand and Allwardt, 1981, p. 10).

Generally, the Mehrten Formation yields large quantities of water to wells, although hydraulic conductivity in the Mehrten varies from place to place (Page and Balding, 1973, p. 22). Ground water in the Mehrten is probably confined in places by consolidated rocks.

CONTINENTAL ROCKS AND DEPOSITS (TERTIARY AND QUATERNARY)

Although continental rocks and deposits of Tertiary and Quaternary age (tables 1 and 2) constitute a number of formations and informal units, in total they compose the major aquifer in the Central Valley, and in general consolidated sediments are fewer than in the Tertiary continental rocks and deposits. For example, Croft (1972, p. 13) said that in the San Joaquin Valley a gradational change probably occurs between the consolidated rocks and the overlying, unconsolidated deposits.

In most places in the Central Valley, the similarity in sediment type of the continental rocks and deposits of Tertiary and Quaternary age and some underlying rocks and deposits, and even between separate units of continental rocks and deposits, makes mapping of subsurface contacts with any degree of certainty difficult if not practically impossible. In this respect, a unit that can be mapped on the subsurface is difficult to delineate in the subsurface, and although in the Central Valley such a unit can be considered a separate aquifer, in the subsurface it merges with similar units to form a major widespread aquifer. In places, this aquifer is separated by confining beds (see "Lacustrine and Marsh Deposits"), and there ground water occurs under both unconfined and confined conditions.

Dale and others (1966, p. 21) in their report on the Kern River area indicated that, although units of continental rocks and deposits could be differentiated and mapped on the surface by using physiographic and weathering criteria, the subsurface equivalents of these units could not be mapped because there was no apparent difference in lithology. Furthermore, E. J. Helley of the U.S. Geological Survey (oral commun., 1982) said that new geologic maps of the valley differ significantly from the old maps because of recent dating of tuffs and new mapping of the continental rocks and deposits in the Central Valley; subsurface equivalents of these newly mapped units, however, are still difficult to determine. Some of these new maps are available (see "Previous Reports").

For this report, continental rocks and deposits of Tertiary and Quaternary age and some of the deposits of Quaternary age have been grouped as the continental rocks and deposits of Tertiary and Quaternary age (QTc) (pls. 1 and 2; tables 1 and 2). They are discussed as a group because (1) some of the new maps, correlations, and interpretations are not yet available; (2) subsurface contacts between units of the group are difficult to determine; and (3) they compose in total the major, widespread aquifer of the Central Valley. Lacustrine and marsh deposits are discussed separately in this report.

The continental rocks and deposits of Tertiary and Quaternary age crop out virtually continuously along the flanks of the Central Valley and dip gently toward the valley trough (pls. 1 and 2). They include the Kern River Formation of Miocene to Pleistocene(?) age, which crops out in the Bakersfield area; the Laguna Formation of Pliocene age, as mapped by Marchand and Allwardt (1981, p. 19, pl. 1); the Tulare Formation of Pliocene and Pleistocene age, which crops out along the western part of the San Joaquin Valley; the Tehama Formation[1] of Pliocene to Pleistocene age (Page and Bertoldi, 1983, p. 17), which crops out along the western and northwestern part of the Sacramento Valley; and the Red Bluff Formation of Pleistocene age, which crops out in the Sacramento Valley. They also include the Turlock Lake Formation, the Riverbank Formation, and the Modesto Formation, all of Pleistocene age, which crop out in both the Sacramento and San Joaquin Valleys. In addition, they include informal units, such as continental deposits of Tertiary and Quaternary age, older alluvium of Pleistocene and Holocene(?) age, and probably younger alluvium of Holocene age. These informal units undoubtedly contain some of the formal units that already have been mentioned.

[1] The Pliocene and Pleistocene age of the Tehama Formation as used in this report does not conform to the Pliocene age of the Tehama as used by the U.S. Geological Survey.

REFERENCE 25

~~000 00518~~

000 00545

CONTACT REPORT

AGENCY/AFFILIATION: City of Turlock		
DEPARTMENT: ~~Department of Public Works~~ Utilities Dept.		
ADDRESS: P.O. Box 1526	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95381

CONTACT(S)	TITLE	PHONE
Dan Wilde	Water Quality Superintendent	(209) 668-5590

BEI PERSON MAKING CONTACT: Kathryn A. Curtis KAC	DATE: 5/5/93
SUBJECT: Turlock municipal water supplies and local geology	
SITE NAME: N/A	EPA ID:

DISCUSSION:

Groundwater is the only source for the City of Turlock's municipal drinking water supply. The city owns and operates 21 active wells, serving approximately 45,000 people (46,000 minus the number of people served by the Del Este system). The city's system is blended, and no one well contributes more than 40 percent of total production. The city regularly screens its wells for contaminants under Chapter 15, Title 22 regulations.

The only municipal well that has been removed from service due to PCE or TCE contamination is the City of Turlock Well 5 (Well 5). The total depth of the well is approximately 240 feet, but it is probably screened at a shallower depth and has not been sealed properly. Maximum concentrations of 8 to 11 micrograms per liter (µg/l) PCE were detected in water samples from Well 5. When PCE contamination levels in Well 5 regularly exceeded 5 µg/l, the well was taken off-line. At this time, the City of Turlock has not decided whether to treat, or permanently close, Well 5. No other wells in the Turlock area have been affected.

PCE has also been detected in up to two private wells at the Tri Valley Growers cannery located on South Golden State, approximately 0.25 to 0.5 mile from Well 5. However, PCE concentrations in these wells are less than 5 µg/l. Water from these wells is currently used in the canning process. Other private wells are located in the Turlock area but are not tracked by the City of Turlock.

CONTACT REPORT (continued)

AGENCY/AFFILIATION: City of Turlock		
CONTACT(S)	TITLE	PHONE
Dan Wilde	Water Quality Superintendent	(209) 668-5590
SITE NAME: N/A	EPA ID:	

DISCUSSION (continued):

A perched aquifer is present above the Corcoran Clay layer (E clay) in Turlock. Locally, the E clay layer varies in depth and thickness from approximately 20 feet to 150 feet thick. The E clay layer reportedly ends east of Denair, but is thought to be present throughout the Turlock area. Groundwater in the perched aquifer is of poor quality and no City drinking water wells draw from this aquifer. However, Mr. Wilde believes that the Turlock Irrigation District and local farmers may use wells that draw from the perched aquifer. The direction of groundwater flow in the perched aquifer varies from a westerly to southerly flow and has a shallow gradient.

The City of Turlock drinking water wells generally draw from the aquifer below the E clay layer, at depths of approximately 400 to 500 feet below ground surface. However, there appears to localized interconnection between the perched aquifer and the drinking water aquifer near Well 5.

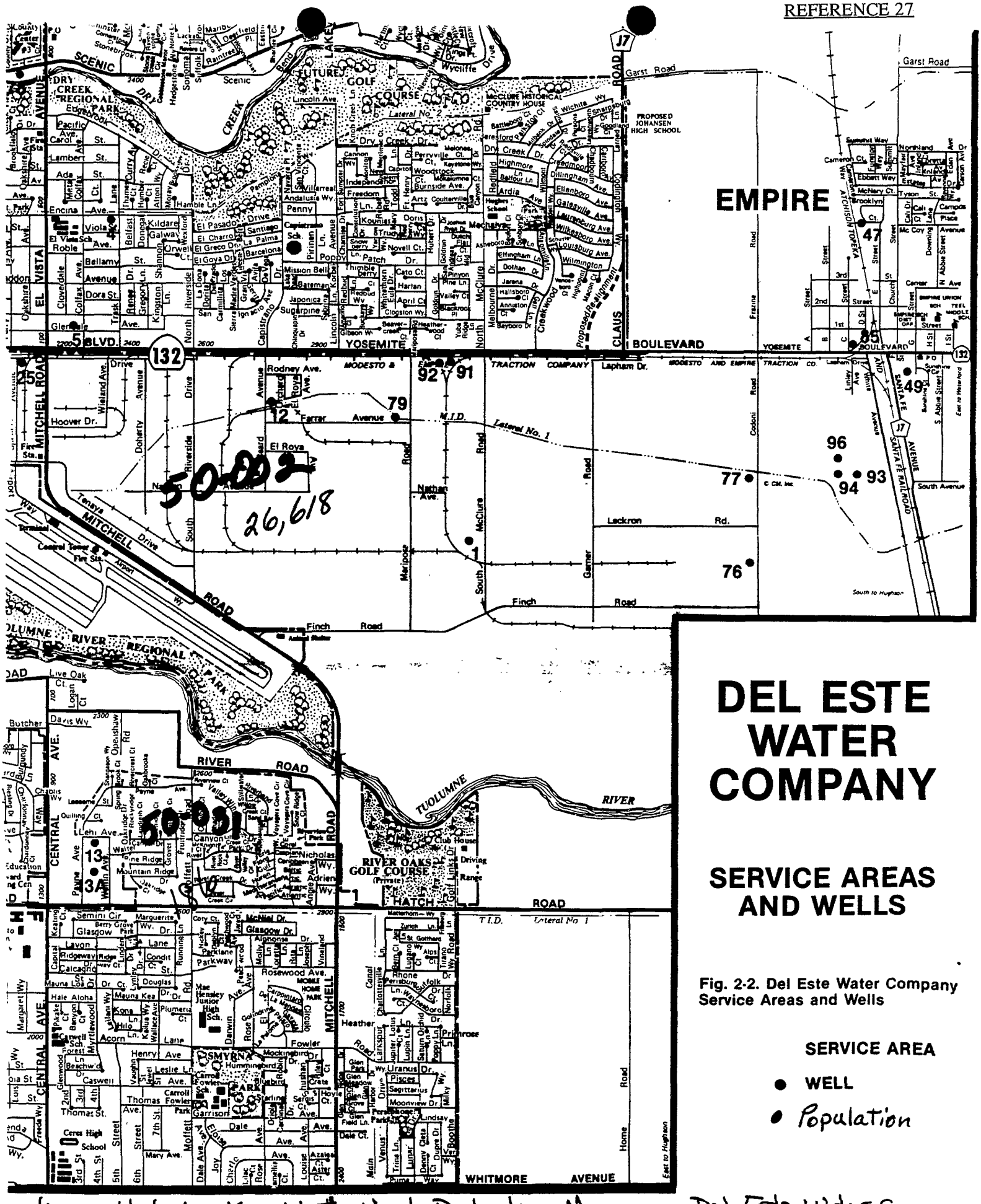
Additional information on Turlock dry cleaners: Snow White Cleaners went out of business in late 1992.

CONTACT CONCURRENCE: _____ DATE: _____

Received from Dan Wilde, with notations. Kathryn Curtis 5/18/93

Information extracted from:

U.S. Department of Commerce, Climatic Atlas of the United States, June 1968.



DEL ESTE WATER COMPANY

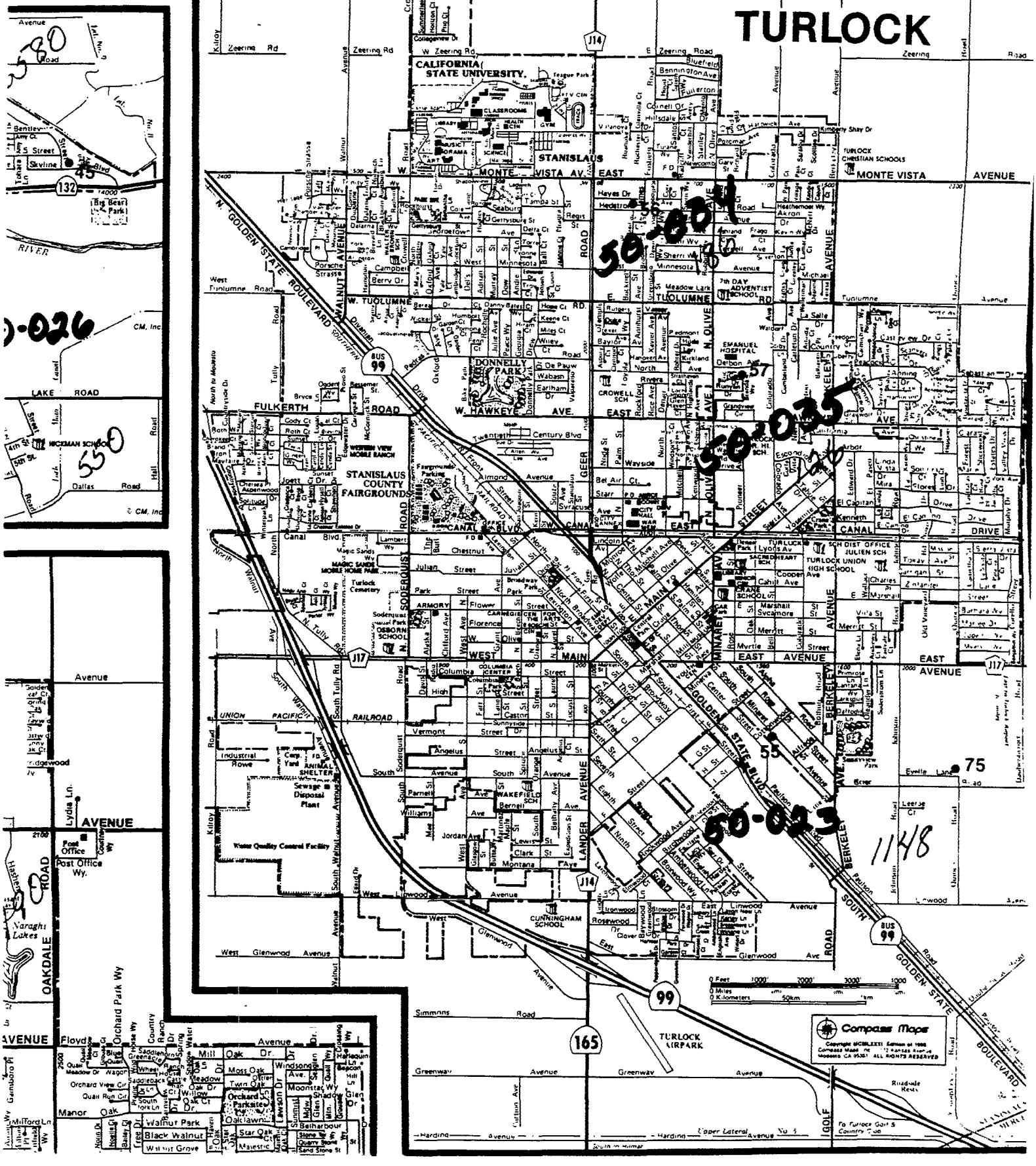
SERVICE AREAS AND WELLS

Fig. 2-2. Del Este Water Company Service Areas and Wells

SERVICE AREA

- WELL
- Population

mation added by Ken ~~Ward~~, Ward, Production Manager, Del Este Water Company



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CONTACT REPORT

REFERENCE 28

AGENCY/AFFILIATION: Turlock Irrigation District		
DEPARTMENT: Water Distribution Department		
ADDRESS: 333 East Canal Drive	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95380

CONTACT(S)	TITLE	PHONE
Will Fryer	Water Distribution Department Manager	(209) 883-8816

BEI PERSON MAKING CONTACT: Gregory R. Carroll GC JS DATE: 10/13/92

SUBJECT: Irrigation canals and laterals in Turlock area, use of canal water

SITE NAME: Turlock Region EPA ID:

DISCUSSION:

Turlock Irrigation District Laterals 3,4,5 and 5-1/2 run through or near Turlock. The irrigation laterals carry surface water diverted from the Tuolumne River, and eventually discharge into the San Joaquin River. The laterals (plus others) converge at a drain, located a few miles west of Turlock, which empties directly into the river. The sewage treatment plant discharges its effluent at the start of this drain.

The 1976 USGS map should be sufficient to locate the different laterals. Note Lateral 5-1/2 which branches off of Lateral 5 southwest of Turlock.

Canals go over weirs and waterfalls, so the water is well aerated by the time it reached the (drain discharging the) San Joaquin River.

Canal water (near Turlock) is used for irrigation, but not for drinking water. (At the head water of the canal system TID provides drinking water to La Grange.) All drinking water in the Turlock area comes from groundwater. The nearest drinking water intake downstream of the canal network is (believed to be) in Stockton.

CONTACT CONCURRRENCE: Will Fryer DATE: 3 Nov 92

(with the changes noted)

CONTACT REPORT

REFERENCE 29

AGENCY/AFFILIATION: City of Turlock		
DEPARTMENT: Utilities Department		
ADDRESS: 900 N.Palm St., P.O. Box 1526	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95381

CONTACT(S)	TITLE	PHONE
DAM ~~Don~~ Madden		(209) 668-5590

BEI PERSON MAKING CONTACT: Tonia Cannizzaro TC JJ	DATE: 10/13/92
SUBJECT: City of Turlock stormwater runoff information	
SITE NAME:	EPA ID:

DISCUSSION:

In Turlock, stormwater runoff flows to Donnelly Storm Pond located in Donnelly Park. Donnelly Park is bordered by Pedras Road, Hawkeye Avenue, and Dels Lane. Storm drains are located throughout the city. Any overflow from Donnelly Storm Pond flows to irrigation laterals.

Stormwater that has drained into Donnelly Storm Pond is then pumped to Turlock Irrigation District Lateral Number 4 that eventually flows to the San Joaquin River. Lateral 4 is the main lateral in Turlock and flows along Canal Drive.

CONTACT CONCURRRENCE: _____ DATE: _____

CONTACT LOG (Cont'd)

Site: Du-Rite Cleaners & Laundry

Name	Affiliation	Phone	Date	Information
Cydney Casper	City of Turlock Planning Department	(209) 668-5565	5/20/93	Turlock lies entirely within Flood Zone C (zone of minimal flooding), according to the National Flood Insurance Program, Flood Insurance Rate Map, Community Panel Number 0603 92B.

REFERENCE 31

000 00306

CONTACT REPORT

AGENCY/AFFILIATION: California Department of Fish and Game		
DEPARTMENT:		
ADDRESS: 1234 East Shaw Avenue	CITY: Fresno	
COUNTY: Fresno	STATE: CA	ZIP: 93710
CONTACT(S)	TITLE	PHONE
Bob Brueggemann	Wildlife Management	(209) 222-3761
BEI PERSON MAKING CONTACT: Kathryn Curtis KAC		DATE: 10/7/92
SUBJECT: Endangered species, sensitive environments, and sport fishing in Merced and Turlock.		
SITE NAME:	EPA ID:	

DISCUSSION:

Two sensitive environments are found in the Merced and Turlock areas: Riparian wetlands along the San Joaquin, Tuolumne, and Merced rivers; and northern hardpan vernal pools.

Endangered species associated with these environments include:

Delta button celery	Kit fox
Colusa grass	Kangaroo rat
San Joaquin Valley orcutt grass	Swainson's hawk
Colusa grass	Succulent owl's-clover
Greene's tuctoria	Hairy orcutt grass
Migrants: Peregrine falcon, Bald eagle	

Mr. Brueggemann doesn't know of any commercial fishing that occurs along the local rivers. Sports fishing does occur, but the quantity of fish caught is not known.

CONTACT CONCURRRENCE: R H Brueggeman DATE: 10/14/92

CONTACT REPORT

REFERENCE 32

AGENCY/AFFILIATION: California Department of Fish and Game		
DEPARTMENT:		
ADDRESS: 1234 East Shaw Avenue	CITY: Fresno	
COUNTY: Fresno	STATE: CA	ZIP: 93710

CONTACT(S)	TITLE	PHONE
Bob Brueggemann	Wildlife Management	(209) 222-3761

BEI PERSON MAKING CONTACT: Gregory R. Carroll	DATE: 12/1/92
SUBJECT: Sensitive environments and fisheries in the vicinity of Merced, California	
SITE NAME:	EPA ID:

DISCUSSION:

Sensitive environments in the Merced area include riparian wetlands along Bear Creek, both upstream and downstream of Merced. Endangered species found along Bear Creek include the following:

Delta button celery (state endangered)
Kit fox (federal endangered/state threatened)
Swainson's Hawk (state threatened)
Peregrine falcon (state endangered, federal endangered) *migrant*
Bald eagle (state endangered, federal endangered) *migrant*
Kangaroo rat (state threatened, but may not occur in riparian wetlands)

Fisheries along Bear Creek are minimal. Bear Creek has a very small watershed. During dry seasons, the water found in the creek comes primarily from irrigation runoff. During very wet years, there may be a minor salmon run, but this is a very rare occurrence. The quantity of fish caught from the creeks is not precisely known, but is thought to be small (less than 1,000 pounds per year).

Nearby watercourses such as Black Rascal Creek and Hartley Slough have been extensively rechannelled by the U.S. Army Corps of Engineers. Little is left of the original riparian environments along these watercourses.

CONTACT REPORT (Cont'd)

AGENCY/AFFILIATION: California Department of Fish and Game		
CONTACT(S)	TITLE	PHONE
Bob Brueggemann	Wildlife Management	(209) 222-3761
SITE NAME:	EPA ID: CAD	

DISCUSSION: Cont'd

Endangered species mentioned in the earlier (10/7/92) contact report (i.e., Colusa grass, San Joaquin Valley orcutt grass, Hairy orcutt grass, Succulent owl's clover and Greene's tuctoria) occur in hardpan vernal pools. The pools are located in the uplands along the border of the San Joaquin Valley and the Sierra foothills upstream of Merced. The pools are temporary rainwater ponds with no defined outlet. Concentric rings of plants grow along the ponds as they dry and the edges of the pond recede.

CONTACT CONCURRRENCE: _____ DATE: _____

APPENDIX C

CONTACT LOG

Site: Du-Rite Cleaners

EPA ID: CAD 981615024

Name	Affiliation	Phone	Date	Information
Ernie Rubi	City of Turlock, Planning Department	(209) 668-5565	9/30/92	See Contact Report written by Tonia Cannizzaro, Bechtel Environmental, Inc. (BEI).
Ken Ward	Del Este Water Co.	(209) 522-1071	9/30/92	Left message.
Dan Wilde	City of Turlock, Utilities Department	(209) 668-5590	9/30/92	Left message.
Polly Lowry	Regional Water Quality Control Board, Central Valley Region (RWQCB)	(916) 361-5649	10/1/92	See Contact Report written by Trey Johnston, Bechtel Environmental, Inc. (BEI).
Dar Swinney	Du-Rite Cleaners	(209) 667-1616	10/6/92	Set up site visit with Dar Swinney, son of owner Rex Swinney.
Bob Brueggemann	California Department of Fish and Game	(209) 222-3761	10/7/92	See Contact Report written by Kathryn A. Curtis, BEI.
Will Fryer	Turlock Irrigation District	(209) 883-8816	10/13/92	See Contact Report written by Gregory R. Carroll, BEI.
Dan Madden	City of Turlock, Utilities Department	(209) 668-5590	10/13/92	See Contact Report written by Tonia Cannizzaro, BEI.
Bob Brueggemann	California Department of Fish and Game	(209) 222-3761	12/1/92	See Contact Report written by Gregory R. Carroll, BEI.
Dan Wilde	City of Turlock, Utilities Department	(209) 668-5590	5/5/93	See Contact Report written by Kathryn A. Curtis, BEI.
Stan Stevens	California Department of Fish and Game	(209) 635-1941	5/10/93	No precise figures for annual fish catches are available for irrigation ditches in the Turlock area, or for the San Joaquin River in Stanislaus County.

Water Resources Data California Water Year 1991

Volume 3. Southern Central Valley Basins and The Great Basin from Walker River to Truckee River

by J.R. Mullen, S.W. Anderson, T.C. Hunter, and E.B. Hoffmar

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-91-3
Prepared in cooperation with the California Department of Water Resources and with other agencies

11274000 SAN JOAQUIN RIVER NEAR NEWMAN, CA

LOCATION.--Lat 37°21'02", long 120°58'34", in NW 1/4 SW 1/4 sec.3, T.7 S., R.9 E., Stanislaus County, Hydrologic Unit 18040002, on left bank 600 ft downstream from bridge on Hills Ferry Road, 650 ft downstream from Merced River, and 3.5 mi northeast of Newman.

DRAINAGE AREA.--9,520 mi^2.

PERIOD OF RECORD.--April 1912 to current year.
SPECIFIC CONDUCTANCE: October 1988 to September 1989.
WATER TEMPERATURE: October 1988 to September 1989.
REVISED RECORDS.--WSP 1930: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 3, 1931, gage at various sites within 240 ft of bridge. Mar. 3, 1931, to Sept. 30, 1959, water-stage recorder within 300 ft of bridge, at datum 47.31 ft higher. Oct. 1, 1959, to Aug. 9, 1960, water-stage recorder at site 70 ft upstream, at present datum. Since Aug. 10, 1960, at present site and datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. Natural flow of stream affected by storage reservoirs, ground-water withdrawals, diversions for irrigation, and imported water; low flows consist mainly of return water from irrigated areas.

AVERAGE DISCHARGE.--79 years, 2,005 ft^3/s, 1,453,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge (river only), 30,700 ft^3/s, Mar. 4, 1983, elevation, 65.78 ft; river and Merced River Slough, 34,400 ft^3/s, Feb. 26, 1969, elevation, 65.90 ft, present datum; minimum, 15 ft^3/s, Aug. 9, 10, 1924.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 2, 1868, reached a stage of 69.0 ft from floodmarks; flood of February 1886 reached a stage of 67.1 ft from floodmarks; and flood of 1911 reached a stage of 66.3 ft from floodmarks. All stages referred to current datum. Discharges unknown.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,110 ft^3/s, Mar. 28, elevation, 52.87 ft; minimum daily, 114 ft^3/s, Sept. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192	254	260	271	149	e350	975	314	171	188	161	146
2	199	274	271	269	143	e495	847	289	186	206	156	146
3	195	287	280	277	159	e640	768	302	173	195	151	154
4	179	304	277	274	184	e725	738	310	173	169	148	136
5	188	337	270	265	191	e810	714	322	157	161	161	121
6	193	354	271	274	187	e840	700	326	153	153	191	114
7	185	357	272	283	189	e790	681	337	148	181	190	116
8	184	350	268	290	198	728	636	318	155	193	161	120
9	186	340	267	274	190	620	574	291	166	183	160	145
10	198	340	268	279	197	576	517	289	173	182	170	163
11	200	347	276	282	205	556	474	280	172	179	164	154
12	178	359	293	281	211	540	415	283	157	150	166	141
13	164	362	297	261	194	510	369	273	151	161	198	151
14	163	340	293	239	188	483	382	280	145	169	148	147
15	160	326	289	228	186	498	406	278	150	157	147	133
16	159	304	280	223	197	537	358	258	144	157	154	134
17	158	309	277	222	214	571	323	248	143	141	188	137
18	158	323	275	218	197	607	303	243	167	134	205	136
19	166	348	277	211	173	628	295	235	168	134	195	129
20	179	337	274	202	177	1010	319	266	156	152	201	130
21	184	318	271	192	168	1690	367	277	147	170	195	135
22	194	308	266	184	161	1980	392	268	126	159	179	136
23	201	314	266	178	149	1760	415	245	125	157	155	143
24	203	313	265	177	143	1340	423	238	138	150	142	152
25	198	297	270	178	157	1110	396	238	161	133	153	145
26	192	284	275	179	164	1480	377	235	145	125	156	130
27	186	266	277	186	149	1880	365	246	143	128	173	131
28	205	264	277	185	e225	2010	372	246	136	140	165	126
29	238	268	275	200	---	1680	392	230	155	148	153	125
30	248	262	265	192	---	1370	373	208	175	163	151	122
31	246	---	265	170	---	1150	---	184	---	172	143	---
TOTAL	5879	9446	8507	7144	5045	29964	14666	8357	4659	4990	5180	4098
MEAN	190	315	274	230	180	967	489	270	155	161	167	137
MAX	248	362	297	290	225	2010	975	337	186	206	205	163
MIN	158	254	260	170	143	350	295	184	125	125	142	114
AC-FT	11660	18740	16870	14170	10010	59430	29090	16580	9240	9900	10270	8130

CAL YR 1990 TOTAL 144622 MEAN 396 MAX 885 MIN 150 AC-FT 286900
WTR YR 1991 TOTAL 107935 MEAN 296 MAX 2010 MIN 114 AC-FT 214100

e Estimated.

CONTACT REPORT

REFERENCE 35

AGENCY/AFFILIATION: City of Turlock		
DEPARTMENT: Planning Department		
ADDRESS: 900 North Palm Street	CITY: Turlock	
COUNTY: Stanislaus	STATE: CA	ZIP: 95380
CONTACT(S)	TITLE	PHONE
Ernie Rubi	Senior Planner	(209) 668-5565
BEI PERSON MAKING CONTACT: Tonia Cannizzaro TC		DATE: 9/30/92
SUBJECT: City of Turlock population information		
SITE NAME: Bright Cleaners	EPA ID: CAD 983579608	

DISCUSSION:

Mr. Rubi informed me that as of January 1, 1992, the city of Turlock has a population of 45,467. Mr. Rubi also said that the average population multiplier is three people per home.

CONTACT CONCURRRENCE: _____ DATE: _____